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A RMSM-X Model for Chile

Luis Serven

A simple macroeconomic model is applied to macroeconomic data for Chile.

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The macroeconomic model for Chile described in this paper — a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department — is part of a series of models for analyzing macroeconomic policy options that are being developed in collaboration with Country Operations divisions. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Susheela Jonnakuty, room N11-039, extension 39074 (105 pages including tables).

The RMSM-X model for Chile is one of a sequence of models that also includes, in increasing order of complexity, the RMSM-XX and MACOR models. The three models share the same budget accounts for an economy disaggregated into several sectors — such as private, public, financial, and foreign — and organized in a flow-of-funds framework.

The models differ in their representation of economic behavior. RMSM-X combines a simple behavioral structure with the basic accounting framework and can be solved recursively to obtain macroeconomically consistent projections for a set of endogenous variables. RMSM-XX will more completely specify the links among economic variables and will require a simultaneous solution procedure. MACOR will be a standard medium-size macroeconometric model that will introduce a more sophisticated behavioral structure into the basic accounting framework.

The model presented in this paper is solved recursively but incorporates some simple behavioral rules to determine private consumption, money demand, imports, and exports.

Serven describes two possible solution procedures (or closure rules) for the model, which allow it to address two types of policy questions.

The first, the "normative" closure, can be used to investigate what macroeconomic policies (fiscal, monetary, or exchange rate policy) would be required to achieve given targets in terms of growth, inflation, and the like.

The second, the "positive" closure, can be used to examine the effects of a given set of economic policies (including fiscal, monetary, and exchange rate policies) on growth, inflation, and the like. Other closure rules can be implemented but are not described in detail in this paper.

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1 - Introduction

Macroeconomic projections are one of the most widely used tools for the evaluation of policy options. However, an important prerequisite for such projections to be of interest is that they satisfy some basic consistency properties, which are defined by the budget equations of the different economic actors. The macroeconomic model that we present in this paper is based on a mutually consistent organization of these equations, and provides a useful framework for the obtention of consistent projections.

Our macroeconomic model for Chile is part of a sequence of models for the analysis of macroeconomic policy options which are being developed at the Macroeconomics Division of the Country Economics Department (CECMG) in collaboration with Country Operations divisions. This sequence includes, in increasing order of complexity, the RMSM-X, RMSM-XX and MACOR models. The three models share the same set of budgetary accounts for an economy disaggregated into several sectors (e.g., private, public, financial and foreign sectors), which are organized according to a flow-of-funds framework. However, they differ in their representation of economic behavior. RMSM-X combines a simple behavioral structure with the basic accounting framework, and can be solved recursively to obtain macroeconomically consistent projections for a set of endogenous variables. RMSM-XX will contain a more complete specification of the links among economic variables, and will require a simultaneous solution procedure. Finally, MACOR will be a standard medium-size macroeconometric model which will introduce a more sophisticated behavioral structure into the basic accounting framework.

The model that we present in this paper belongs to the first stage of that sequence. It is solved recursively, but it does incorporate some simple behavioral rules to determine private consumption, money demand, imports and

exports. In the paper we describe two of the possible solution procedures (or closure rules) for the model, that allow it to be used to address two types of policy questions. The first one, that we label the "normative" closure, can be used to investigate what macroeconomic policies (that is, fiscal, monetary and exchange rate policy) would be required to achieve given targets in terms of growth, inflation, etc. The second is the "positive" closure, in which the model is used to examine the effects of a given set of economic policies (including again fiscal, monetary and exchange rate policies) on growth, inflation, etc. Other closure rules can also be implemented, although they are not described in detail in this paper.

The paper is organized as follows. Section 2 describes the basic elements of the model (its detailed formulation appears in Appendix A), and two alternative closure rules. Section 3 describes the model's empirical implementation in two steps: first, we construct a consistent set of historical data (whose detail is provided in Appendix B). The "positive" version of the model is then used to simulate the macroeconomic efects of two alternative fiscal policy scenarios. Section 4 presents some concluding remarks.

2 - Description of the model

The basic elements of the model are the budget identities of the different economic sectors, the market-clearing relationships, the projection rules for the variables, and the model closure. The first two guarantee the accounting consistency of the model. The budget identities ensure that each sector's available resources equal its uses. In turn, the market-clearing equations ensure that the available supply of goods or assets equals the sum of the corresponding sectoral demands. However, because of the simplicity of the model, some of them

can be also viewed as simple 'adding up' constraints that must be satisfied in order to ensure accounting consistency.

The model is completed with the projection rules and the choice of closure. The projection rules can be of different types: some of them are behavioral relationships, such as the import equation or the money demand function; others are simple rules that link the time path of a certain variable (e.g., government transfers to the private sector) to that of a relevant 'scale' variable (such as GDP). Finally, some variables (e.g., the world interest rate) are entirely exogenous, in the sense that their assumed future evolution is not affected by any other variable in the model.

The relevant set of projection rules depends on the type of closure selected for the model or, in other words, on the choice of the set of variables that will be endogenously determined by the budget constraints and the market-clearing relationships. As we shall discuss below, the appropriate closure largely depends on the type of policy question to be addressed in the model's simulations.

Finally, the model also includes a simplified debt module. The detailed formulation of the complete model appears in Appendix A (Table A1); here we shall limit ourselves to a brief description of its building blocks.

2.1 - Budget constraints

The sectoral budget identities reflect the simple fact that each sector's total (current and capital) uses must equal its total resources. The relevant number of budget identities to be considered is given by the number of different economic sectors in the model. In the case of Chile, the distinction between the Government and the Public Enterprises is necessary in order to make explicit the

important role of copper for public finances. In addition, the separate consideration of the Central Bank and the rest of the Banking System appears also necessary. The large operating losses of the Central Bank of Chile, mainly due to its bailout of the commercial banks after the financial crisis of 1982, and the magnitude of its debt (both internal and external) pose an important problem for economic policy in Chile, that would be glossed over in a consolidation of the entire financial system. Thus, we use a six-sector breakdown of the economy, which distinguishes the Government (whose variables are denoted by the subscript g), the nonfinancial Public Enterprises (denoted o), the nonfinancial private sector (denoted pr), the Central Bank (denoted cb), the rest of the financial system (denoted bs), and the foreign sector (denoted f). Hence, there are six sectoral budget equations in the model. In addition, the National Accounts identities have also to be considered.[1]

Because of the extensive debt conversion operations carried out in Chile in recent years, it is important to take explicit account of their impact on each sector's finances, which are affected because the conversion of external debt at a discount generates capital gains. Moreover, the latter do not necessarily accrue to the original debtor; as we describe in more detail below, the precise distribution of the capital gains (as well as their magnitude) depends on the mechanism through which the debt conversion is carried out. The sectoral budget constraints in the model allow for all these effects[2].

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[1] Of course, not all of these equations can be linearly independent. We return to this issue below.

[2] Here and elsewhere in the paper we use the term 'capital gains' in its accounting sense. Whether repurchases or swaps of foreign debt at a discount yield economic capital gains to the domestic debtors is an altogether different (and unsettled) question. On the other hand, such operations are excluded from the Government's accounts in the model. This is due to the fact that all of its external debt is official, and hence it has not been affected by debt conversion

For convenience, we can separate each budget equation into a current account identity and a capital account identity. Using the variable definitions in Table 1, the sectoral budget constraints can be written:

The Government[3]

Current Account

$$(1a)\quad FY_g + TD_{pr} + TD_o + TI + Div_o = i \cdot B_{g(-1)} + i \cdot CR_{g(-1)} + i \cdot DC_{g(-1)} + e \cdot i^* \cdot BF_{g(-1)} + [GTR_{pr} + GTR_{cb} - e \cdot FTR_g] + Sub + C_g + S_g$$

Capital Account

$$(1b)\quad S_g + \Delta DC_g + \Delta CR_g + \Delta B_g + e \cdot \Delta BF_g = KTR_o + KTR_{pr} + I_g$$

The Government's current revenues consist of its factor income plus direct and indirect tax revenue and profit transfers from the public enterprises[4]. Revenues are used to finance interest payments on domestic and foreign debt instruments, current transfers to other economic sectors, subsidies to the private sector, public consumption, and government savings[5] (equation 1a). The latter, together with the increase in net indebtedness (domestic and foreign) finance the government's gross investment plus its capital transfers to the other nonfinancial sectors of the economy (equation 1b).

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operations.

[3] In the empirical application of the model, the government sector corresponds to the consolidated central government, including Social Security funds.

[4] The latter are net of current Government transfers to the public enterprises.

[5] All savings variables in the model refer to gross savings (i.e., including depreciation).

Table 1

Variable definitions

BF = foreign debt (in foreign currency)
B = domestic debt
C = consumption
Cgain = capital gain on debt conversion (in foreign currency)
Conv = net foreign debt converted (in foreign currency)
CR = domestic credit from the banking system
DC = domestic credit from the Central Bank
DEP = Private deposits in the banking system
DFIconv = Direct foreign investment for debt conversion (in foreign currency)
DFInconv = Other direct foreign investment (in foreign currency)
Div = Dividends
e = Nominal exchange rate (period average)
eeop = Nominal exchange rate (end of period)
Fin = external debt financing flow
FTR = current transfers from abroad (in foreign currency)
FY = factor income
GTR = current transfers from the Government
H = Stock of base money
i, i^* = domestic and foreign nominal interest rates
I = investment
KTR = capital transfers from the government
M = money stock
MGNFS = imports of goods and nonfactor services (in foreign currency)
OTR = current transfers from the public enterprises
rDFI = profit remittances (in foreign currency)
Rcb = foreign reserves of the Central Bank (in foreign currency)
S = saving
Sub = Government subsidies
TD = Direct taxes
TI = Indirect taxes
XCOP = exports of copper (in foreign currency)
XOGNFS = other exports of goods and nonfactor services (in foreign currency)
Y = GDP at current market prices

Notes

All variables are defined in nominal terms. Where applicable, lowercase letters denote the constant-price value of the corresponding uppercase variables.

Sector-specific variables are denoted by the following subscripts:

bs = banking system
cb = Central Bank
f = foreign sector
g = Government
o = nonfinancial public enterprises
pr = nonfinancial private sector

The Public Enterprises

Current Account

(2a) $FY_{o,cop} + FY_{o,ncop} =$

$$TD_o + i \cdot B_{o(-1)} + i \cdot CR_{o(-1)} + e \cdot i^* \cdot BF_{o(-1)} + Div_o + OTR_{pr} + S_o$$

Capital account

(2b) $S_o + KTR_o + \Delta B_o + \Delta CR_o + e \cdot \Delta BF_o + e \cdot Cgain_o = I_o$

Because of the importance of public copper production in Chile, it is explicitly separated in equation 2a as one of the sources of factor income of the public enterprises. Their current expenditures include interest payments on domestic and foreign debt, direct taxes and profit transfers paid to the Government, and transfers to the private sector.

The gross capital formation of the public enterprises is financed by capital transfers from the Government, domestic and foreign debt issue, capital gains collected on debt conversion (which will be described later), and by their own savings (equation 2b).

The Central Bank

Current account

(3a) $e \cdot i^* \cdot R_{cb(-1)} + i \cdot DC_{(-1)} + GTR_{cb} = i \cdot B_{cb(-1)} + e \cdot i^* \cdot BF_{cb(-1)} + S_{cb}$

Capital account

(3b) $S_{cb} + \Delta H + \Delta B_{cb} + e \cdot \Delta BF_{cb} + e \cdot Cgain_{cb} = e \cdot \Delta R_{cb} + \Delta DC$

Current revenues of the Central Bank include interest receipts on its foreign reserves and its net domestic credit stock, and transfers from the

Government. We ignore the Central Bank's operating costs; hence its current revenues finance interest payments on the Central Bank's domestic and foreign debt, and the Central Bank's savings (equation 3a). The latter, along with the net increase in the money base, the net issue of domestic and foreign debt, and the capital gains obtained from foreign debt conversion, finance the acquisition of foreign reserves and domestic credit creation (equation 3b).

An important fraction of Chile's foreign reserves are kept in the Copper Stabilization Fund (CSF), which was established in 1985 but only became active in 1987. It accumulates foreign exchange reserves from export receipts of the public copper company (CODELCO) when copper prices exceed a reference 'long term' price (agreed annually with the IMF) by a specified amount. The CSF used to take the form of a Treasury deposit at the Central Bank, from which withdrawals could be made when the price of copper fell below a specified threshold. However, the functioning of the CSF was recently altered, as in 1988-89 the Treasury used its deposit to cancel debt with the Central Bank. Contrary to the original concept of the CSF, this operation has eliminated the Treasury's ability to moderate the impact of lower copper prices on its revenues by drawing down on its deposit.

The Banking System

Current account

(4a) $i \cdot CR_{(-1)} = i \cdot DC_{bs(-1)} + e \cdot i^{*} \cdot BF_{bs(-1)} + Div_{bs} + S_{bs}$

Capital account

(4b) $S_{bs} + \Delta DC_{bs} + \Delta DEP + e \cdot \Delta BF_{bs} + e \cdot Cgain_{cb} = \Delta CR + \Delta H_{bs}$

The Banking System's current revenue is equal to the interest receipts on

its net credit stock. Current expenditures consist of interest payments on its debt to the Central Bank and to the foreign sector, and dividends paid to the private sector[6] (equation 4a); as with the Central Bank, operating costs are neglected. The creation of net credit (net of liabilities to the private sector other than demand deposits) and bank reserves are financed by savings, private demand deposits, Central Bank loans, foreign debt, and the capital gains obtained from debt conversion (equation 4b).

The Balance of Payments (in foreign currency terms)

Current account

(5a) $MGNFS + (i^{*}\cdot BF_{(-1)} + rDFI) = (XCOP + XOGNFS) + (FTR_{,} + FTR_{pr}) + S_f$

The current revenues of the foreign sector are just the current payments abroad of the domestic economic sectors. Thus, they consist of imports of goods and nonfactor services and net factor payments, disaggregated into interest payments and profit remittances. Similarly, the current expenditures of the foreign sector are equal to exports plus current transfers to the domestic economic sectors (equation 5a)[7].

Capital account

The capital account of the balance of payments states that foreign savings (the current account deficit) must equal the net financing flow of foreign debt (net of foreign reserve changes) plus the financing flow of direct foreign

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[6] Private demand deposits are assumed to earn no interest.

[7] As a simple extension, a more detailed disaggregation of imports and exports could be introduced.

investment:

(5b) $DFInconv + Fin = S_f$

where Fin denotes the net financing flow of foreign debt, and DFInconv is direct foreign investment not related to debt conversion.

Due to the conversions of foreign debt, the change in the net foreign debt stock does not equal the financing flow of foreign debt in the capital account of the Balance of Payments. It may be useful to show how they are related. This can be done by noting that the actual change in the net foreign debt stock ΔBF equals the financing flow Fin minus the nominal value of the net debt converted[8] (net of any foreign reserves used in the conversion):

$$\Delta BF = Fin - Conv$$

Thus the capital account of the Balance of Payments can also be expressed

(5b') $DFInconv + (\Delta BF + Conv) = S_f$

However, it may also be useful to rewrite (5b') making explicit the capital gain collected by the domestic economy on its debt reduction operations. In the Chilean case some of the debt conversions take the form of debt-equity swaps, in which one type of external liability (foreign debt) is replaced with another (domestic equity held by foreigners)[9]. Let us denote by DFIconv the amount of equity (expressed in foreign currency) thus obtained by foreigners in replacement

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[8] In practice this will not hold exactly, due to changes in cross exchange rates. These are ignored here for simplicity.

[9] These are the so-called "Chapter 19" operations. The other mechanisms are direct buybacks using the Central Bank's foreign reserves, and swaps of foreign debt for parallel market foreign assets of the private sector.

of their debt claims[10]. Adding and substracting it to (5b'), we can rewrite:

(5b") (DFInconv + DFIconv) + ΔBF + (Conv - DFIconv)= S_f

Hence, total external financing is equal to the sum of total direct foreign investment (including that for debt conversion), plus the actual change in the net debt stock (net of foreign reserve changes), plus the capital gain on debt conversion operations. The latter is measured by the term (Conv-DFIconv), which represents the net reduction in external liabilities (net foreign debt and equity) achieved through debt conversion[11].

It is important to emphasize that, in the Chilean case, the capital gain thus measured overstates the true capital gain collected by domestic agents. The reason is that many debt conversion operations take the form of swaps of foreign debt for parallel market assets of the private sector[12]. In terms of the official accounts, the cost of such operations is zero (since they do not use up any official foreign assets), and the measured capital gain must equal the nominal debt converted; it exceeds the true capital gain by the amount of illegal assets used in the conversion [13].

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[10] Note that in general DFIconv will not equal the nominal of the debt converted in the swap. If the debt is swapped at a discount (as will be usually the case), there will be a capital gain accruing to the domestic debtor; thus, the equity sold to foreigners DFIconv will fall short of the nominal of the debt converted.

[11] The presentation of the capital account in (5b") is similar to that used by the IMF. In the latter, the capital gain term (Conv-DFIconv) is usually labelled 'Counterpart to debt conversion'.

[12] Most of these operations are called "Chapter 18 Conversions" in the Chilean context.

[13] In other words, such operations involve both a gain for domestic agents (because the swap is carried out at a discount) and a repatriation of flight capital (because it is financed with illegal assets); the sum of these two components equals the nominal of the debt converted. Since flight capital is not

The Private Sector

Current account

$$(6a)\quad FY_{pr} + i \cdot B_{(-1)} + GTR_{pr} + e \cdot FTR_{pr} + OTR_{pr} + Div_{bs} = TD_{pr} + i \cdot CR_{pr(-1)} + e \cdot i^* \cdot BF_{pr(-1)} + e \cdot rDFI + C_{pr} + S_{pr}$$

Capital account

$$(6b)\quad S_{pr} + KTR_{pr} + \Delta CR_{pr} + e \cdot \Delta BF_{pr} + e \cdot Cgain_{pr} + e \cdot (DFIconv + DFInconv) = I_{pr} + \Delta B + \Delta M$$

The final budget constraint is that of the private sector. Its current revenues consist of its own factor income plus interest receipts on domestic debt, dividends from the Banking System, and current transfers from the government, the public enterprises, and the foreign sector. They are used to finance direct tax payments to the Government, interest on domestic and foreign private debt, profit remittances, and private consumption and savings (equation 6a).

In the capital account, total financing equals the sum of private savings, capital transfers from the Government, net credit from the Banking System, the net change in the foreign debt stock, the capital gain made on debt conversion operations, and the flow of direct foreign investment (including that for debt conversion purposes). They are used to finance private investment and the acquisition of money and domestic public debt by the private sector.

National Accounts

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included in the 'official' accounts, the latter will show a decrease in external debt without a matching decrease in any asset (or increase in any liability).

Current Account

$$Y = C_g + C_{pr} + S_g + S_o + S_{cb} + S_{bs} + S_{pr} + e \cdot S_f$$

Capital Account

$$S_g + S_o + S_{cb} + S_{bs} + S_{pr} + e \cdot S_f = I_g + I_o + I_{pr}$$

The final equations are just the current price National Accounts. They require that GDP be equal to total consumption plus total saving, and that the latter be equal to total investment. However, they do not represent additional budgetary equations, since they can be shown to be implied by the sectoral budget constraints.[14]

Thus, the accounting structure of the model can be summarized by two 'total sources = total uses' statements for each economic sector: one for current account transactions, and another for capital account transactions. Of course, each of these pairs can be collapsed into one single equation by eliminating the respective savings variable.

An alternative presentation of the sectoral budget constraints is provided by the sources-and-uses-of-funds matrices in Figure 1, which reports the consistent macroeoconomic accounts for the year 1988 (the historical data for the years 1987 and 1989 was organized in the same consistent manner). A similar matrix can be constructed for each year of the projection period.

The first matrix summarizes the current transactions of each economic sector; the second does the same for the capital account transactions. Both matrices are based on the same principle: each row reflects the corresponding sector's sources of funds; each column shows its uses of funds. For each economic

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[14] That is, the National Accounts identities are linearly dependent on the sectoral budget equations. If the latter are satisfied, the former will also hold.

Figure 1
1988 CONSISTENCY FRAMEWORK - CHILE
(Billions of Pesos, current prices)

CURRENT ACCOUNT OF:

Sources = across / Uses = down	National Accounts	Government		Public Enterprises		Central Bank	Banking System	Non Financial Private Sector		External Sector		Total Sources
National Accounts		Cg	568.5			Scb	Sbe					GDP
				So	148.1	-184.4	112.1	Cpr	3536.8	RB	386.7	5411.0
		Sg	294.6					Spr	508.2	e.Sf	40.5	
Government	VAg 150.0			TDo	385.5							Govt. Sources
	TI 786.6			DIVo	105.7			TDpr	125.6			
	-Sub -163.5											1389.9
Public Enterprises	VAo 773.9											PE Sources
												773.9
Central Bank		i.DCg	-1.8				i.DCbe			e.ifR.Rcb		CB Sources
		CTRcb	0.0				44.2				44.0	
												86.5
Banking System		i.CRg	4.3	i.CRo	6.8			i.CRpr	430.2			BS Sources
												441.3
Non Financial Private Sector	VApr 3864.0	CTRpr	584.7	i.Bo	0.0	i.Ecb	DIVbe					PR Sources
		CTRree	-186.7			155.0	172.1			e.FTRpr	15.4	
		iBg	63.8	CTRpr	64.9		id.DEPpr					4753.3
							0.0					
External Sector		-e.FTRg	-28.0	e.if.BFo			e.if.BFbe	e.r.DFI	74.3			Total FX Pays
		e.if.BFg	70.5		62.9	e.if.BFcb	112.8	e.if.BFpr	78.2			
						115.9						486.6
Total Uses	GDP 5411.0	Gov.Uses	1389.9	PE Uses	773.9	CB Uses 86.5	BS Uses 441.3	PR Uses	4753.3	Total FX Receipts	486.6	

1988 CAPITAL ACCOUNT OF:

Sources = across / Uses = down	National Accounts	Government		Public Enterprises		Central Bank	Banking Sector	Non Financial Private Sector		External Sector		Total Sources
National Accounts		Ig	155.7	Ie	167.3			Ipr	596.0			It
												919.0
Government	Sg 294.6					dDCg	dCRg	dBg	144.8	e.dBFg	127.3	Govt.
						-214.4	-162.0					190.3
Public Enterprises	So 148.1	KTRo	34.6				dCRo	dBo	-35.7	e.dBFo	-12.2	PEs
							25.9					167.3
										e.Kgaino	6.6	
Central Bank	Scb -184.4						dRbe	dRpr	45.7	e.dBFcb	-245.7	CB
							8.6	dRcb	172.5	e.Kgainc	91.8	-111.5
Banking System	Sbe 112.1					dDCbe		dDEPpr	118.7	e.dBFbe	-231.7	BS
						-63.8						-30.8
										e.Kgainb	33.7	
Non Financial Private Sector	Spr 508.2	KTRpr	0.0				dCRpr			e.dBFpr	-123.6	PR
							98.7			e.DFItot	232.5	1042.0
										e.Kgainp	328.3	
External Sector	e.Sf 40.5					e.dRcb				-e.Kgain	-460.4	External
						166.5				-e.DFIco	-199.6	-453.1
Total Uses	St 919.0	Govt.	190.3	PEs	167.3	CB -111.5	BS -30.8	PR	1042.0	External	-453.1	

sector, the sum of the entries in its row (labelled 'total sources') must equal the sum of the entries in its column ('total uses' in Figure 1), in order to ensure the accounting consistency of the data. For completeness, the National Accounts identities have also been included in the matrices.

2.2 - Markets and projection rules

In order to make the consistent accounting framework useful for simulation purposes, we must add rules describing how the income, expenditure, and financial asset (or liability) holdings of each economic sector will evolve over time. For some of the variables in the model (e.g., public investment), the applicable projection rule depends on the choice of model closure, which will be examined in section 2.3. Here we will briefly describe the projection rules that are common to all model closures.

It may be useful to organize the discussion in terms of 'markets' for goods and assets. However, because of the simplicity of the model, most of them are just 'quasi-markets', in that the mechanism by which supply and demand for the relevant good or asset will be equalized is not explicitly modelled. Hence, as we noted above, the corresponding market-clearing conditions can also be seen as simple 'adding-up' requirements forcing equality between supply and demand.

Starting with the goods market, equilibrium requires that aggregate supply of goods be equal to aggregate demand:

(7) $y + mgnfs = c_g + c_{pr} + i_g + i_o + i_{pr} + xgnfs$

where we use lowercase letters to denote constant price variables. Supply is the sum of real GDP and real imports. Real GDP is determined by past investment according to a simple ICOR rule:

(8) $y_{t+1} = y_t + (i_{g,t}+i_{o,t}+i_{pr,t})/ICOR_{t+1}$

Equation (8) embodies the simplifying assumptions that private and public investment are equally efficient in terms of their contribution to growth, and also that their gestation period is identical (and equal to one year). These assumptions can be easily modified.[15] It is also important to bear in mind that the ICOR parameter in (8) can be interpreted as a measure of the efficiency of investment when the equation is used to describe the time path of potential or full-capacity GDP; however, when the expression is written in terms of actual GDP (as it is here) the ICOR parameter will involve a mixture of efficiency factors (determining the path of potential GDP) and capacity utilization (determining the discrepancy between actual and potential GDP). Changes in efficiency or in the degree of capacity utilization will both be reflected in changing ICORs.

Imports and exports are projected using behavioral equations, whose parameters were estimated econometrically. Real imports are a function of real GDP and the real exchange rate, defined as the ratio of import prices (expressed in domestic currency) to the gdp deflator:

(9) mgnfs = mgnfs(y, ereal)

The real exchange rate is

(10) ereal = $e \cdot p^*_M / p$

where p^*_M is the world price of imports, and p is the GDP deflator. An increase in real GDP raises imports, while an increase in the real exchange rate (that is, a real depreciation) has the opposite effect.

On the export side, we distinguish between copper and non-copper exports.

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[15] It would also be easy to extend the model to allow for the effect on growth of human capital accumulation. This could be accomplished by introducing as another determinant of real growth public expenditure on items such as education, health, etc (which are recorded as public consumption expenditures).

Real copper exports are exogenous[16]. Noncopper exports are determined by world market growth (which is also exogenous) and by their profitability, as measured by the price of exports (in domestic currency) relative to the GDP deflator:

(11) $xncop = xncop(y^*, e \cdot p^*_{xo}/p)$

where y* represents world market size, and p^*_{xo} is the world price of noncopper exports. An increase in either argument in (11) leads to an increase in real exports.

Real private consumption is also projected using an econometrically estimated equation:

(12) $c_{pr,t} = c_{pr}(yd, c_{pr,t-1})$

where yd is real disposable income. In accordance with the empirical evidence for Chile, the short-run impact on consumption of changes in disposable income is assumed to be smaller than the long-run impact. In turn, real disposable income is just equal to nominal disposable income, adjusted for inflation and depreciation, and divided by a weighted average of domestic and import prices[17].

The remaining real expenditure items are public consumption and real investment (both public and private). The relevant projection rule for each of these variables depends on the choice of model closure, which we discuss in section 2.3.

So far we have considered only real variables. Nominal variables are just the product of the respective real variable and the corresponding deflator. This applies to nominal GDP, nominal investment, imports and exports. The world prices

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[16] It would be easy to relate them to the relative price of copper, or to world growth.

[17] The implicit consumption deflator may be the correct price index to deflate nominal disposable income. However, under such definition of real disposable income the model would become simultaneous instead of recursive. The index described in the text was adopted for this reason.

of imports and exports are exogenous; in particular, the world price of copper is projected separately from that of noncopper exports. The investment deflator is projected as a weighted average of domestic and imports prices. Finally, the consumption deflator is obtained as a residual from the National Accounts current-price identity.

Assets markets

There are five assets in the model: money, Central Bank credit, credit provided by the private banking system, domestic public debt, and foreign debt.

In the money market, money supply is determined by the monetary base H and the multiplier:

(13) $M^S = H/[h+\rho(1-h)]$

where h is the ratio of currency to total money holdings of the private sector, and ρ is the reserve coefficient on bank deposits; both coefficients are exogenously given. In turn, demand is projected using an econometrically estimated equation in which real money demand depends on real GDP and on the nominal interest rate[18]. The latter equals the real interest rate, which is exogenously given, plus expected inflation, assumed equal to current inflation[19]. Formally,

(14) $M^d/p = m(y, i)$

where $i=rint+\pi$ is the nominal interest rate, rint is the real interest rate, and

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[18] Recall that in our notation M represents the end-of-period money stock. In contrast, money demand is projected as a period average. In the model, both are related by making the latter a weighted average of the curent and past end-of-period money stocks.

[19] Thus, we are assuming static expectations. The equation can be easily generalized to allow for any adaptive expectations scheme. However, rational expectations (or perfect foresight, in this context) would introduce major complications in the solution procedure.

π is the inflation rate. Hence money market equilibrium requires

(15) $H = [h+\rho(1-h)]\cdot p\cdot m(y,i)$

The remaining asset markets are just 'quasi-markets' in the sense described above. In the Central Bank credit market, equilibrium requires that the total stock of domestic credit be equal to its demand by the public and private banking sectors:

(16) $DC = DC_g + DC_{bs}$

Public enterprises do not receive credit from the monetary authority; in turn, Central Bank credit to the nonfinancial private sector (which is almost negligible in Chile) is netted out from the Central Bank's domestic debt stock.

Similarly, the equilibrium condition in the Bank credit market requires that the Banking System's total supply of credit equal its demand by the public and private sectors:

(17) $CR = CR_g + CR_o + CR_{pr}$

In the domestic debt market, equilibrium requires that the private sector be willing to hold the debt issued by the government, the Central Bank, and the public enterprises. All three types of debt are assumed perfect substitutes from the viewpoint of the private sector. Hence, we have

(18) $B_g + B_o + B_{cb} = B$

Public enterprises are assumed to issue debt to finance a given fraction of their budget imbalance. The Central Bank's domestic debt issue is a given percentage of nominal GDP growth, plus the issue required to sterilize debt conversion operations (this has been the procedure followed in the past by the Central Bank of Chile).

Finally, in the foreign asset market the total net debt stock (that is, net of Central Bank reserves) supplied by the foreign sector must equal its

demand by the domestic economic sectors:[20]

(19) $BF = BF_g + BF_o + BF_{bs} + BF_{pr} + BF_{cb} - Rcb$

As before, public firms are assumed to finance a given fraction of their budget imbalance with foreign debt. The actual change in their foreign debt stock equals that financing flow minus the amount of debt converted. The financing flow to the private sector, as well as to the Central Bank, are determined so as keep an specified external debt/GDP ratio (again, the actual change in the respective debt stocks equals the financing flow minus the conversion of debt). The Banking System's foreign liabilities are determined in a similar manner, using its total free assets (deposits minus required reserves) rather than GDP as the relevant scale variable.

Projection rules for other variables

The model keeps track of financial asset stocks by adding each period's flow to the previous period stock. Interest payments on domestic and foreign assets are projected as the product of the previous period asset stock and the applicable nominal interest rate.

We still need to introduce projection rules for some fiscal and foreign variables.[21] In many cases, the projection rules simply link the variable of interest to some 'scale' variable (such as GDP).

Among the fiscal variables, indirect taxes, subsidies, and current transfers to the private sector are projected as percentages of GDP. Transfers to the Central Bank are equal to the interest payments on a special Treasury Note

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[20] Foreign assets held by the banking system, which are small in the Chilean case, are netted out in BF_{bs}.

[21] The complete list of variables for which additional projection rules or values are required appears in Section IV of Table A1 in Appendix A.

held by the Central Bank for recapitalization purposes. Direct taxes and dividends to the government from the public enterprises are percentages of their factor income; the same applies to the public enterprises' current transfers to the private sector. Capital transfers from the government to the private sector and the public firms are a percentage of their respective investment expenses. Real investment of the public enterprises is projected as percentage of real GDP. Direct taxes on the private sector are related to its value added.

Government production is a given percentage of GDP. Non-copper factor income of the public enterprises is determined in the same manner. Factor income from copper production depends positively on the price of copper and on the production volume. The latter, as well as the price of copper in foreign currency, is exogenous.

Total debt conversion, as well as its breakdown by sector and by conversion mechanism (e.g., buybacks, debt-equity swaps, etc) are exogenous. The capital gains from the conversion accruing to each sector are computed as follows. First, the capital gain on buybacks (if any are projected) equals the net nominal repurchased (net of foreign reserves used in the buyback), and is collected entirely by the Central Bank. Second, the capital gain on debt-equity swaps equals a fixed fraction of the nominal converted, and it accrues to the sector whose debt is converted. Third, as explained above, the capital gain on swaps of foreign debt for parallel market assets regulated by the Central Bank (called 'Chapter 18 conversions' in Chile) equals the nominal of the debt converted. The gain is divided among the Central Bank (whose capital gain is a fixed percentage of the nominal converted[22]), the relevant debtor sector (who collects another

[22] The Central Bank captures part of the gain by auctioning the rights to this type of swaps (called "Chapter 18 operations"); this is the so-called 'Central Bank fee'.

fixed percentage), and the private nonfinancial sector, who collects the rest[23]. Finally, we have the swaps of foreign debt for parallel market assets not regulated by the Central Bank (that is, not included in Chapter 18 operations). On these we assume that the original debtor's gain is a fixed percentage of the nominal converted, and that the rest of the gain (up to the nominal converted) accrues to the private nonfinancial sector.[24]

Finally, foreign variables such as current transfers and direct investment not related to debt conversion are projected in absolute (dollar) terms.

2.3 - Model closure[25]

The remaining element that is needed to complete the model is the choice of the set of variables that will be determined endogenously (or residually) by the budget constraints and market equilibrium conditions. This question can be better understood in terms of the model's equations summarized so far. If we use each sector's capital account to replace the corresponding saving variable in its current account, we are left with six budget equations. Substituting the projection rules into these six equations and also into the six market clearing conditions, the model can be reduced to a total of twelve equations. Since the sum of all six budget constraints can be shown to equal the sum of excess demands

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[23] The implicit assumption is that the private nonfinancial sector's illegal assets are the ones being used in the conversion.

[24] As noted before, this procedure exaggerates the profit obtained by the private sector from swaps of debt for illegal foreign assets. The extent of the overestimation equals the stock of parallel market assets used in the conversion.

[25] The discussion in this section builds on Serven and Ventura (1989).

in all six markets[26], it follows that only eleven of these twelve equations are linearly independent. To close the model we must specify the set of eleven variables that will be determined endogenously.

The appropriate choice of endogenous (or residual) variables largely depends on the specific purpose of the simulation exercise to be undertaken. On the other hand, the choice of closing variables also determines whether the solution of the model will be recursive or simultaneous.

Here we shall limit ourselves to the class of recursive solutions. Even with this restriction, there are different types of experiments for which the model can be used. First, it may be simulated to assess the effects of alternative economic policy programs on a set of key macroeconomic variables (such as growth, inflation, foreign reserves, etc). In this case the policy variables (e.g., public expenditure, money growth, etc) would be determined exogenously, and the model would be solved for the resulting values of the target variables. We label this the positive closure.

In an alternative exercise, the purpose can be to find the economic policies that should be applied in order to achieve given objectives in terms of inflation, growth, etc. Thus, the paths of these target variables are specified exogenously, and the model is solved for the fiscal, monetary, and exchange rate policy variables. We call this the normative closure. We now examine these two alternatives in more detail[27].

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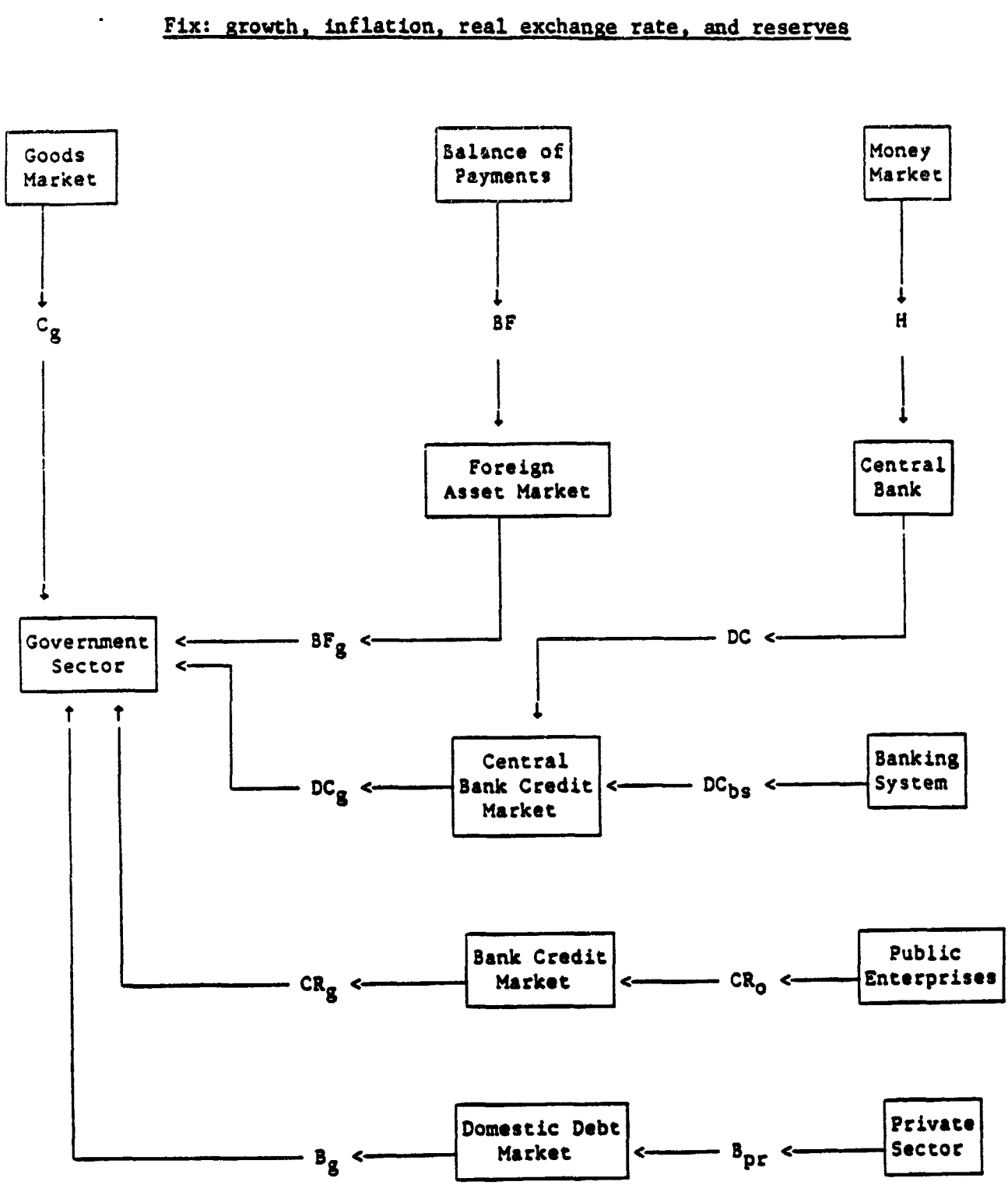
[26] This is just the implication of Walras' law in this particular context.

[27] These are by no means the only possible closures. For example, a third possibility, that could be labelled the 'policy feasibility' closure, would be to specify the path of economic policy and also of the target macroeconomic variables, leaving private sector aggregates as endogenous. The 'reasonableness' of the resulting private sector behavior would then provide an indication of the consistency of the assumed policies with their intended objectives.

Figure 2: The Normative Closure



The normative closure

The solution of the model under this closure is illustrated in Figure 2. Basically, it amounts to finding the values of a set of public sector variables (public consumption and investment c_g and i_g, public sector financing variables B_g, Bf_g, CR_g and CR_o, and the monetary policy variable DC_{bs}) which are required to achieve the given macroeconomic targets. Thus, the first step is to specify the latter: the user must determine the desired paths for the inflation rate π, the rate of growth of real GDP, the real exchange rate, and also the desired stock of foreign reserves in terms of months of imports. In this manner, the paths of prices and real GDP are determined directly. Given the ICOR parameter, this also determines the amount of real investment that must be carried out to satisfy the growth requirement.

In the normative closure, private investment is projected as a proportion of real GDP (it can also be made dependent on the real interest rate). For given investment of the public enterprises i_o, it follows that government investment i_g will have to adjust in order for the total investment requirement to be met.

In this way, we have determined real GDP and real investment. With the assumed real exchange rate path, imports and noncopper exports are also determined. Private consumption is in turn determined by disposable income. Hence, public consumption c_g is the endogenous variable that must adjust for the goods market to clear. Notice also that from the given targets for inflation and for the real exchange rate, we obtain the required nominal exchange rate.

Turning to the Balance of Payments, foreign transfers and direct foreign investment are exogenous, while interest payments on foreign debt are determined by the previous period stocks. Hence the residual item is the change in net foreign debt ΔBF. This determines the total stock of net foreign assets available

in the foreign asset market. With sectoral demands determined as we described before, and with the given foreign reserve target, the government's foreign debt stock BF_g is the residual variable.

In the money market, the given inflation rate and real interest rate determine the nominal interest rate and the price level, while real output is given by the growth assumption. Together, they determine the trajectory of money demand. This yields the required path of the money stock and, through the multiplier, of the money base.

Turning to the Central Bank, its foreign reserves and foreign debt have already been determined, as well as the money base and its domestic debt stock. Thus the stock of domestic credit DC must adjust for the Central Bank's budget constraint to be satisfied.

The Banking System has already determined its foreign debt; in turn, private deposits are given by money demand and the deposit to money ratio (1-h). Using the reserve coefficient ρ, this yields also required reserves. Credit supply is projected as a given percentage of the Banking System's total free assets (deposits minus required reserves). Hence, banks' borrowing from the Central Bank DC_{bs} is the endogenous (or residual) variable in their budget constraint. Given total domestic credit DC and the portion allocated to private banks, the Central Bank credit market determines credit to the government DC_g.

Since the domestic and foreign debt stocks of the public enterprises have already been determined, their budget constraint determines their demand for bank credit CR_0.

Private credit demand is projected as a percentage of GDP (it could also be related to private investment). With total supply in the bank credit market already given, and since bank credit to the public enterprises CR_0 has already

been determined, the remaining credit must be allocated to the government. Finally, the private sector's budget constraint determines the total stock of public debt B that the private sector is willing to hold; since the supplies of Central Bank and public enterprise debt have been determined above, government debt B_g is the endogenous variable in the domestic debt market[28].

This completes the mathematical solution process under the normative closure. However, we must bear in mind that the recursive nature of the model under this closure, as well as under the alternative closure described below, does not allow explicit consideration of all the relevant economic relationships among the variables. Thus, some of these relationships must be checked 'ex-post'. For example, there is no explicit link between real interest rates and private demand for domestic debt. The user has to verify that these 'implicit equations' are not violated by the model's solution. If this is not the case, then another iteration, reconsidering some of the assumptions and/or targets, will be necessary.

The positive closure

As described above, the objective under this closure is to find the effects of a specified set of fiscal, monetary and exchange rate policies on the target macroeconomic variables (growth, inflation, the real exchange rate, foreign reserves). Thus, the first step is to fix the paths of fiscal variables (i.e., public consumption and investment), of the money base (which we assume to be the relevant monetary policy variable), and of the nominal exchange rate.

The solution structure appears in Figure 3. Starting with the money market, money supply is obtained from the exogenous money base and the multiplier. Real

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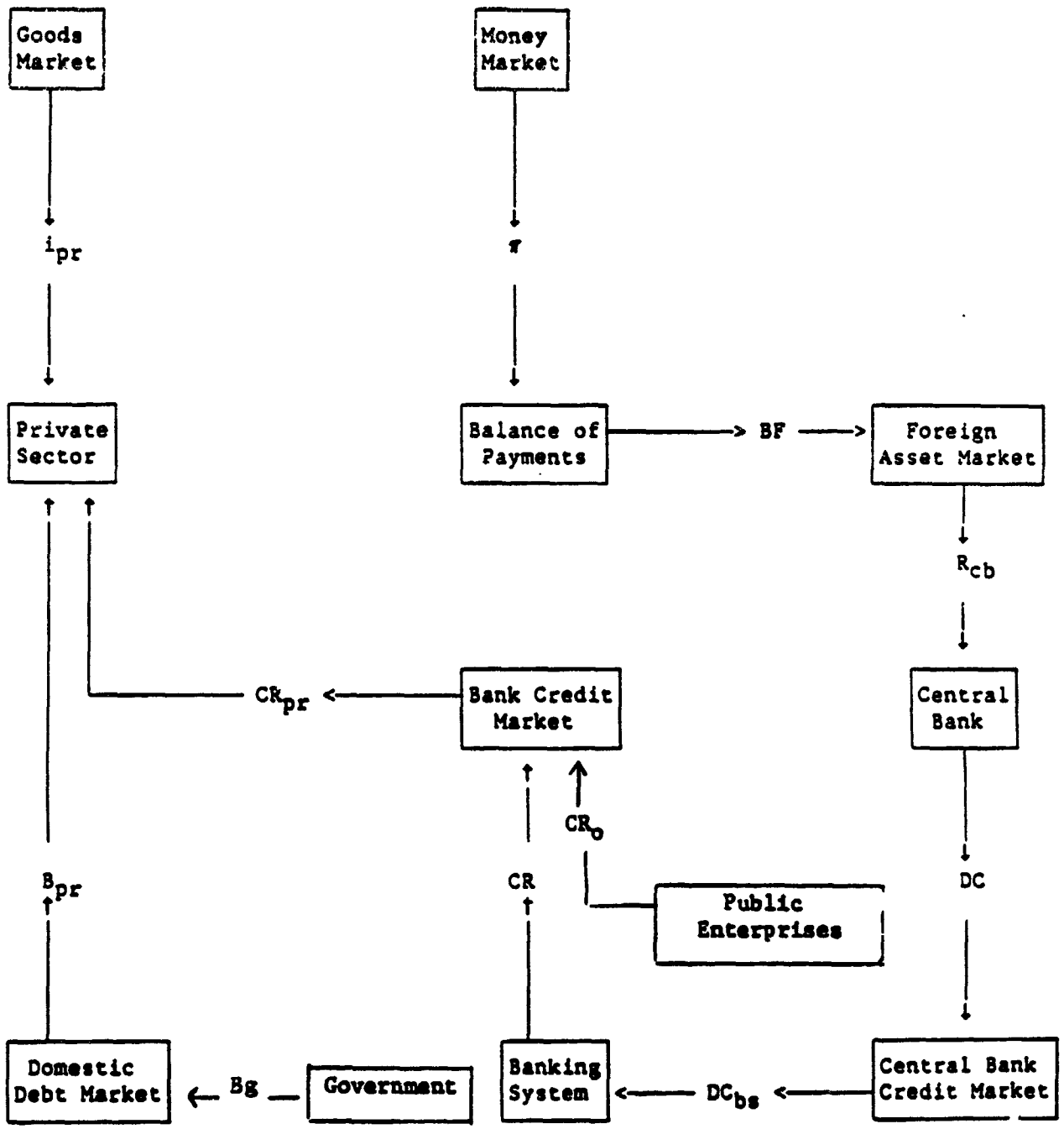
[28] Note that the government budget constraint (1) has not been used. This reflects the linear dependence to which we made reference above.

Figure 3 : The Positive Closure

Fix: fiscal, monetary, and exchange rate policy



GDP is as before determined by past investment and the exogenous ICOR. Thus, monetary equilibrium yields the nominal interest rate, and hence the inflation rate and the price level.

The price level thus obtained, together with the assumed nominal exchange rate, yield the real exchange rate and hence real exports and imports in the goods market. Government consumption and investment are now given; in particular, they are projected as percentages of real GDP. Thus the goods market is closed by adjusting private investment[29] i_{pr}.

The Balance of Payments plays the same role as in the previous closure. In the foreign asset market the government's external borrowing is now projected as a fraction of its budget imbalance. Thus, the balancing item in the foreign asset market now is the stock of foreign reserves.

As before, the balance sheet of the Central Bank determines its stock of domestic credit. Similarly, in the Central Bank credit market the flow of credit demanded by the government now is projected as a given fraction of its budget imbalance. Hence the residual item is credit to the banking system DC_{bs}.

As in the previous closure, the balance sheet of the banking system determines total credit CR, and the budget equation of the public enterprises determines their demand for credit CR_o. However, the flow of bank credit to the government is now projected as a percentage of its budget imbalance. Thus, the adjusting variable that clears the bank credit market is now credit to the private sector CR_{pr}. Finally, the change in the stock of government debt is now determined by the government's budget constraint. Hence, the domestic debt market

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[29] We should note that under this closure the model may become dynamically unstable if the ICOR parameter is constant. The reason is that an increase in current output results in increased investment, which in turn raises future output even further. This problem is easily overcome if the marginal efficiency of investment is assumed to decrease as the capital/output ratio increases.

now clears through the appropriate adjustment in the total stock of debt held by the private sector[30].

2.4 - The debt module

The final element of the model is a simplified debt module. Essentially, the debt module compares the external borrowing requirements obtained from the macro model's solution with the financing flows that are expected to be availabe to Chile in the projection years. This serves to identify the possible financing gaps for each economic sector and for the economy as a whole. On the basis of the resulting gap(s), the user must judge whether the financing requirements implied by the macroeconomic model can be met or whether some modification in the projection assumptions (in order, say, to reduce the current account deficit) is needed.

To implement the debt module, some simplifying assumptions were made. For example, all future disbursements are assumed to be made on identical terms (maturity and grace period), equal to the average terms received by Chile in 1988. The interest rate on future disbursements is set at a constant premium over LIBOR. However, it would be easy to modify these assumptions if more detailed information were available.

The functioning of the debt module can be described as follows. First, for each economic sector we have the amortization schedule on already existing debt, that we call Oldamort; this includes ordinary amortizations only (it does not include the extraordinary amortizations associated with debt conversions). Similarly, for each economic sector we have a schedule of disbursements that have

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[30] Again, observe that in this closure the private sector's budget constraint (6) has not been used.

already been identified (i.e., the 'pipeline debt'); this is labelled OldDisb. Notice that Oldamort and OldDisb refer to different concepts: the former includes amortization on old debt only; the latter reflects identified future disbursements.

On the other hand, the simulation of the macro model yields, for every year and economic sector, the change in the external debt stock ΔBF_j (for j = g,o,cb,bs,pr). We can start with the identity

$$\Delta BF_j = Fin_j - Conv_j \qquad \text{for } j = g,o,cb,bs,pr$$

where Fin_j is the net financing flow of foreign debt to sector j (excluding debt conversion operations), and $Conv_j$ is sector j's extraordinary amortization (debt conversion) in the period. On the other hand, net financing can be written

$$Fin_j = Disb_j - Amort_j$$

which simply says that the external financing flow to sector j equals disbursements to the sector minus ordinary amortization payments by the sector. We can disaggregate disbursements into the already identified component OldDisb and the new disbursement, from unidentified sources, called Gap; also, we can separate the amortization payments on old debt Oldamort and on new debt (both from identified and unidentified sources) Newamort:

$$Disb_j = OldDisb_j + Gap_j$$

$$Amort_j = Oldamort_j + Newamort_j$$

Amortization payments on new debt are computed using the applicable assumptions on the terms of the disbursements. Again, they include payments on both previous OldDisbs and previous Gaps.

Combining these equations, we can write sector j's financing gap as

$$Gap_j = Fin_j + Oldamort_j + Newamort_j - OldDisb_j$$

that is, as the net financing needs identified in the macro model plus the

ordinary amortization payments on old and new debt, minus the comitted disbursements. Alternatively, we can also write the gap in terms of the actual change in the debt stock as

$$Gap_j = \Delta BF_j + (Oldamort_j + Newamort_j + Conv_j) - OldDisb_j$$

where the term in brackets represents total amortization payments, both ordinary and extraordinary (i.e, including debt conversion). Finally, the total financing gap of the economy is just equal to the sum of the respective sectoral gaps.

3 - Simulating the model

The simulation of the model proceeds in two steps. First of all, in order to calibrate the model we need to construct a consistent set of historical data. This is briefly summarized below (the details appear in Appendix B). Secondly, we have to characterize the projection scenario and the type of experiment to be carried out. Our purpose in the simulations will be to examine the implications for Chile's internal and external balance of a fiscal expansion, which appears as a likely policy choice in view of the recent political developments in the country. Thus, we use the positive closure in the projection exercises below.

3.1 - Historical data

A typical difficulty that arises in the construction of a consistent historical data set is the discrepancy between different data sources. For example, the fiscal accounts and the national accounts may report conflicting public investment figures. The discrepancies can often be attributed to differences in definitions or in accounting procedures. Resolving these conflicts requires a judgement on the issue of which data source must be overruled. As

noted by Khadr et. al. (1989), such judgement should largely depend on which set of accounts it is more important to reproduce accurately in order to address policy questions.

In the case of Chile, we prepared consistent flow data for the years 1987 to 1989. This required the use of information on the 1986 financial stocks as well. The inclusion of 1989 among the historical years was dictated by the availability of preliminary estimates of most economic variables for that year.

Appendix B describes the construction of the historical data in more detail. The major problem that arose concerned public consumption, for which the National Accounts figures are much larger than the estimate obtained from fiscal data[31]. The discrepancy amounts to over three percentage points of GDP, so that at least one of the two statistical sources is seriously flawed. For our purposes, and pending an in-depth reexamination of the historical public consumption figures, we opted for reorganizing the information so as to satisfy the historical National Accounts. Specifically, we reduced the item 'Government transfers to the private sector' in the government's accounts by the amount of the discrepancy[32]. Needless to say, this crude adjustment implies that the fiscal data thus reorganized should be interpreted with extreme caution. The same applies to the private consumption figures, which for the historical years are calculated as the difference between total consumption and public consumption, and also to private disposable income, which is affected by the change in the net transfer item.

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[31] This estimate was calculated as the sum of wages and salaries and purchases of goods and services of the consolidated central government. The discrepancy could be related to a misclassification of some military expenditures in the fiscal accounts (see e.g. Scheetz (1987)).

[32] That is, we are assuming that a portion of public consumption is erroneously described as transfers in the Fiscal Accounts.

Some difficulties were also encountered when constructing the financial sectors' balance sheets. The Central Bank of Chile stopped publishing consistent monetary balances in 1986. We had to rely basically on IMF data, completed with partial information from the Central Bank. Because both sources may not be consistent, the results should be viewed with some caution.

Finally, the computation of interest payments on the outstanding liabilities of each sector for the historical years also raised some problems. In most cases, a breakdown of interest payments on domestic and foreign debt consistent with our sectoral disaggregation was not available. Thus, the corresponding figures were computed by applying an estimated interest rate (domestic or foreign, as appropriate) to the previous end-of-year financial stock.

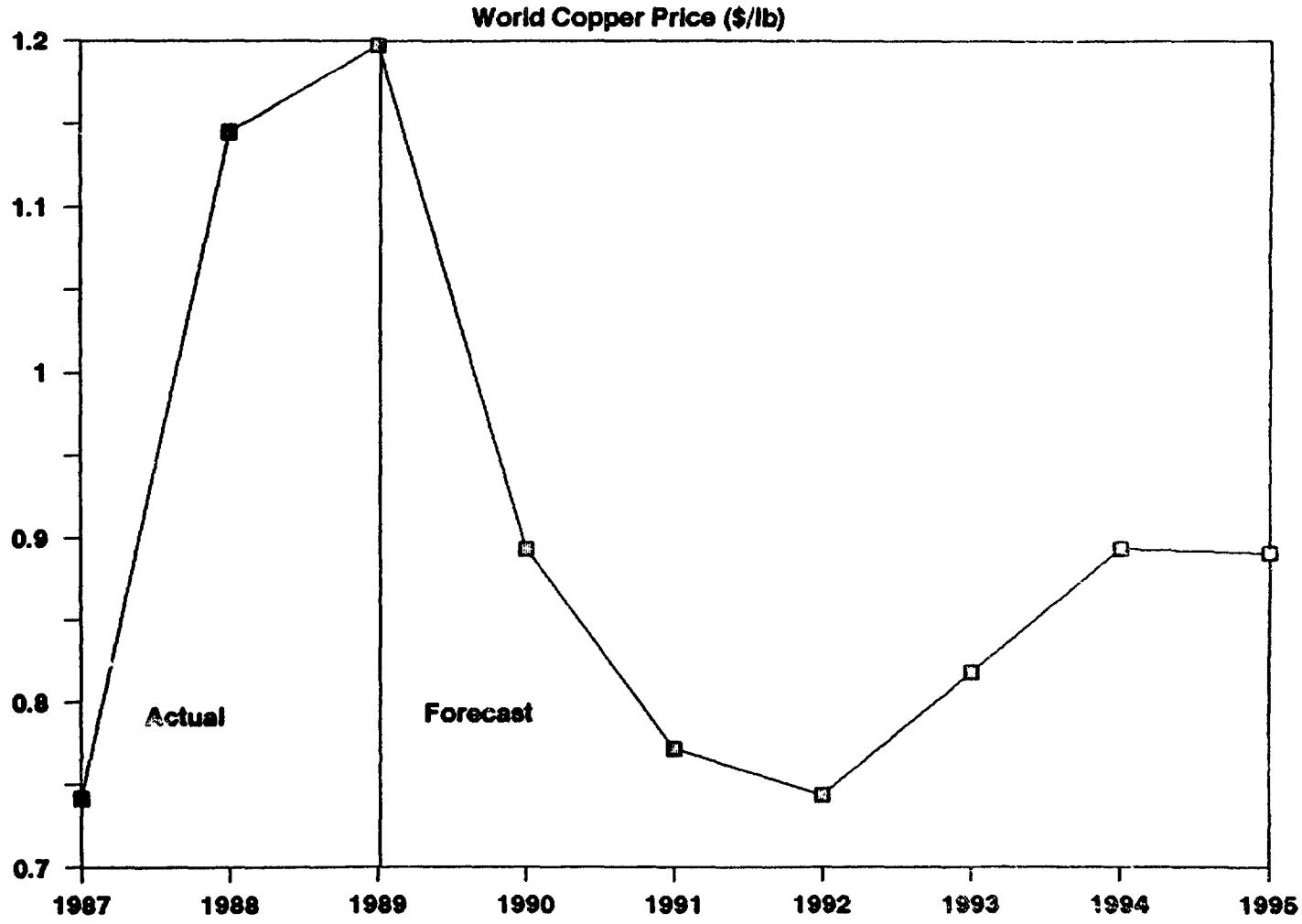
3.2 - Projection results, 1990-95

We used the model's positive closure to examine two projection scenarios, which differ in the specification of fiscal policy. In the first or 'base' scenario, fiscal policy remains unchanged. Thus, public consumption and investment, as well as other public expenditures and revenues (with the exception of copper revenues, which are endogenous) remain roughly constant as percentages of GDP (or of the relevant scale variable). We should emphasize that the base scenario thus defined represents just a 'benchmark', and it should not be viewed as a 'most likely' scenario.

The second scenario is characterized by more expansionary fiscal policy. Public consumption and investment rise relative to GDP, along with public transfers to the private sector. The expansion is partly (but not fully) financed by tax increases.

Both scenarios have in common the assumption of a drastic copper price

Figure 4


World Copper Price ($/lb)
1.2
1.1
1
0.9
0.8
0.7
Actual
Forecast
1987
1988
1989
1990
1991
1992
1993
1994
1995

decline starting in 1990-91, followed by a partial recovery afterwards (Figure 4). The assumed path of nominal exchange depreciation is also the same: the rate of depreciation rises in 1990-91 to reverse the real appreciation of 1988-89, slows down in 1992-93 (as copper prices stop falling and copper production increases reduce the pressure from the external sector), and rises again from 1993 on, to stimulate the competitiveness of noncopper exports and compensate for the lack of further increases in copper production. Finally, monetary growth decelerates gradually, and real interest rates rise initially to cool down the economy after the 1989 boom.

Some other details which are common to both scenarios should also be mentioned. First, in accordance with the new legal framework in Chile, it is assumed that no Central Bank financing will be available to the Government. Hence, the fiscal deficit has to be financed by the domestic private (financial and nonfinancial) sector, and by foreign borrowing. The latter is assumed to provide 70 percent of the required financing. At the same time, we assume that the Central Bank will keep the Copper Stabilization Fund in operation, setting aside in a special reserve account a certain fraction of copper export revenues when copper prices are high, and withdrawing from it when they are low (as long as funds are available).

Second, in 1990 the government is assumed to start paying interest on the Treasury Bond held by the Central Bank for recapitalization purposes.[33] Third, debt conversions are assumed to decline relative to 1988-89, and to cease altogether after 1992; further, all future conversions are assumed to take the form of debt-equity swaps. The capital gain captured by the relevant domestic

[33]Legally, the government is required to pay 2 percent interest on the bond, whose principal is denominated in US dollars. The remaining difference up to LIBOR is capitalized.

debtor is assumed to equal 12% of the nominal of the debt converted.

The parameter values used in the base scenario appear in Appendix C. Since in many regards 1989 appears to be an 'exceptional' year, certain parameters for 1990 were chosen in a special manner, and deserve some comment. Preliminary figures indicate that the boom of 1989 (in which real GDP grew about 10%) was led by investment, which grew over 30% in real terms. The fastest expansion corresponded to private investment. To a large extent, this spectacular investment growth reflected inventory accumulation rather than fixed investment, probably due to expectations of real depreciation and/or trade-restricting measures. The high growth rate of real imports (over 26% in 1989) points in the same direction. Also, noncopper export growth exceeded 15 percent in real terms, well above their past performance despite the real appreciation of the peso.

In view of these developments, we choose our assumptions as follows. First, we raise the ICOR for 1990, to reflect the fact that a large portion of the 1989 investment did not take the form of fixed capital and hence will not lead to an increase in the potential output of the economy. Secondly, under the assumption that the speculative stimulus to aggregate spending will disappear (and perhaps reverse itself) in 1990, we reduce for that year the degree of inertia of private consumption and imports; we do the same with noncopper exports, implicitly assuming that their spectacular growth in 1989 was in part an exceptional event. Taken together, these assumptions amount to a drastic cooldown of the economy in 1990.

In addition to this, ICOR values for 1991-92 are set below their 'normal' (or long-run) level. This is done to allow in those years for some additional real growth due to the scheduled opening of La Escondida mine, that will boost copper production by about 10% in each year. This effect disappears after copper

production from that source reaches its maximum in 1992.

Projection results: base scenario

The key economic indicators for the base simulation appear in Table 2 (detailed simulation results are presented in Appendix C).

With our assumptions, the economy experiences a drastic slowdown in 1990. Real GDP growth falls from its 1988-89 levels, to an average of about 4.8 percent in 1990-95. The growth rates of private consumption and, especially, private investment fall sharply in 1990, and there is a transitory increase in inflation. In turn, the fall in copper prices leads to a significant deterioration in the external balance. The resource balance surplus falls in 1990-91, to recover later as copper prices reverse their fall, and with the help of the sustained real depreciation that results from our assumptions. The latter helps contain absorption (through its adverse effect on real disposable income and consumption) and stimulate net noncopper exports. The current account deficit peaks at almost 6% of GDP in 1990-91; however, it declines to 3% of GDP at the end of the projection period (1995).

The impact of the copper price fall on public finances is also substantial. The savings of the overall public sector (including the Central Bank) are wiped out, as the surplus of the nonfinancial public sector becomes insufficient to cover the operating losses of the Central Bank - which in addition rise due to the effects of higher interest rates on its domestic debt stock. The government budget turns into deficit, that peaks at 0.8 percent of GDP in 1992. The deficit of the consolidated nonfinancial public sector rises up to 2.5 percent of GDP in the same year. Both deficits then decline gradually as copper prices reverse their fall. In turn, the deficit of the overall public

Table 2
BASE SCENARIO - KEY ECONOMIC INDICATORS

	1988	1989	1990	1991	1992	1993	1994	1995
REAL GROWTH RATES								
GDP	7.4%	10.0%	4.4%	5.2%	5.5%	4.6%	4.6%	4.6%
Consumption	8.9%	8.1%	3.3%	3.7%	4.3%	4.1%	3.7%	4.0%
Investment	8.6%	32.6%	[illegible].4%	1.8%	1.6%	3.3%	6.0%	6.1%
Imports	12.0%	26.3%	5.4%	6.1%	7.4%	6.8%	6.5%	6.6%
Exports	6.1%	14.8%	11.2%	12.2%	12.2%	9.4%	7.3%	6.8%
Copper	-0.9%	13.4%	4.2%	8.8%	13.2%	3.0%	1.5%	1.9%
Non copper	9.2%	15.4%	13.8%	13.4%	11.8%	10.2%	9.1%	8.2%
CONSTANT RATIOS TO GDP								
Total Consumption	78.1%	78.7%	75.9%	74.8%	73.9%	73.5%	72.9%	72.4%
Public	10.1%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%
Private	67.9%	67.4%	66.6%	65.5%	64.6%	64.2%	63.6%	63.1%
Total Investment	18.1%	21.8%	21.0%	20.3%	19.5%	19.3%	19.5%	19.8%
Public	6.4%	5.3%	5.1%	4.9%	4.7%	4.7%	4.7%	4.7%
Private	11.7%	16.5%	15.9%	15.4%	14.8%	14.6%	14.8%	15.1%
Total Imports	24.1%	27.7%	27.9%	28.2%	28.7%	29.3%	29.8%	30.4%
Total Exports	27.9%	29.2%	31.1%	33.1%	35.2%	36.5%	37.4%	38.2%
CURRENT RATIOS to GDP of:								
Domestic Savings	24.1%	23.8%	20.6%	20.0%	20.2%	21.2%	22.2%	23.1%
National Savings	16.2%	17.1%	13.8%	13.6%	13.8%	14.8%	14.6%	16.0%
Public	4.8%	4.1%	-0.9%	-1.1%	-0.4%	0.3%	0.8%	0.6%
Private	11.5%	13.1%	14.7%	14.6%	14.1%	14.5%	14.4%	15.4%
Total Investment	17.0%	20.1%	19.8%	19.3%	18.7%	18.4%	18.7%	19.0%
Public	6.0%	4.9%	4.8%	4.7%	4.5%	4.5%	4.5%	4.5%
Private	11.0%	15.2%	15.0%	14.7%	14.2%	13.9%	14.2%	14.5%
Resource Balance	7.1%	3.7%	0.8%	0.7%	1.5%	2.7%	3.5%	4.1%
Current Account Balance	-0.7%	-3.0%	-5.9%	-5.7%	-4.9%	-3.7%	-4.1%	-3.0%
Government Deficit	-1.9%	-2.4%	-0.2%	0.5%	0.8%	0.4%	0.3%	0.2%
Non Fin.Public Sector Deficit	-2.2%	-2.4%	1.1%	2.2%	2.5%	2.1%	2.1%	2.0%
Overall Public Deficit	1.2%	0.8%	5.7%	5.7%	4.8%	4.2%	4.2%	3.9%
Net Public Debt	55.6%	46.5%	47.3%	44.2%	43.7%	41.5%	40.7%	38.4%
Domestic	17.5%	19.1%	20.0%	22.6%	23.9%	24.4%	24.0%	25.5%
Foreign	38.4%	27.5%	27.3%	21.6%	19.8%	17.2%	16.7%	12.9%
EXTERNAL INDICATORS								
Net External Debt / GDP	72.2%	60.6%	62.9%	56.1%	55.6%	51.9%	52.6%	48.2%
Interest Payments / GDP	8.1%	7.0%	7.1%	6.6%	6.0%	5.4%	5.5%	5.6%
CA Deficit (in US $ million)	165.0	789.0	1554.6	1594.5	1491.0	1217.7	1478.4	1202.7
Net Reserves	2550.0	2948.0	3035.2	3163.6	3423.1	3995.3	4381.4	5572.6
Reserves in months of Imports	4.6	4.1	3.8	3.5	3.4	3.5	3.4	3.9
Financing gap (in US$ million)			4.8	823.0	778.0	999.9	679.9	1169.4
Public			-198.8	372.6	702.2	606.0	575.3	679.0
Private			203.7	450.4	76.8	393.9	104.6	490.4
PRICES								
Inflation rate (GDP deflator)	21.1%	15.8%	24.5%	18.4%	12.2%	12.9%	13.5%	13.5%
Nominal exchange rate depreciation		8.0%	29.0%	17.5%	[illegible] 0%	8.0%	9.0%	9.0%
Real exchange rate depreciation(+)	-0.9%	-3.5%	8.8%	4.2%	1.0%	0.4%	0.9%	0.8%
Real Exchange Rate Index	100	97	105	109	111	111	112	113
Real Interest Rate	4.1%	6.1%	6.5%	5.5%	4.0%	3.0%	3.0%	3.0%

sector exceeds 5 percent of GDP in 1990-91, and declines later due to the combined action of higher copper prices and lower interest rates. However, the relatively moderate size of the fiscal imbalance allows a decline in the stock of public debt (including the Central Bank's) relative to GDP. Domestic public debt to the financial and nonfinancial private sector rises somewhat, but there is a larger decline in the net foreign debt stock relative to GDP.

Despite the adverse external developments, the aggregate stock of net foreign debt relative to GDP (measured at end-of-period exchange rates) falls 12 percentage points in the projection period. Net reserves in months of imports decline from their high levels of 1988-89, but remain throughout above 3 months of imports. The external gap implied by these developments gradually grows from almost zero in 1990 to an average of 800 million in 1991-95, with the gap of the overall public sector generally exceeding that of the private (bank and nonbank) sector.[34]

The Fiscal Expansion scenario

The fiscal policy changes that characterize this scenario are gradually implemented between 1990 and 1993. Government consumption and investment respectively rise by 1.5 and 1 percentage points of GDP relative to the base scenario. Current transfers to the private sector are also increased by 1.5 percentage points of GDP. To partially finance the fiscal expansion, direct and indirect taxes gradually rise by about 1 and 1.5 percentage points of GDP, respectively.

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[34] The exception is 1990, when the public gap is negative. This implies that the already identified disbursements exceed the financing needs obtained from the model's simulation, and could be due to an incorrect estimation of the amortization or disbursement schedules.

To make the projections more realistic, we need to allow for the effects of the expansionary policies on growth and also on interest rates. Thus, we assume that capacity utilization will be transitorily increased, leading to some additional growth. Hence, the ICORs for 1990-93 are slightly reduced from their values in the base scenario; in 1994-95 they are unchanged. However, we also have to allow for the impact of higher growth on interest rates. To take this into account, we adopt the combined assumption of slightly higher real interest rates (with the difference peaking at one percentage point in 1991-93) along with slightly faster monetary expansion (an additional 1.5 percentage points of money supply growth in 1990-92, gradually eliminated later). This latter assumption can be interpreted as a partial monetary accomodation, in order to avoid too sharp an increase in real interest rates. The remaining assumptions are identical to the base scenario.

Table 3 presents the economic indicators for this scenario (the complete results appear in appendix D). Real GDP growth rises transitorily above its level in the base scenario, and gradually returns to it at the end of the projection period. Both consumption and investment growth are increased, although private investment is partially 'crowded out' by the fiscal expansion in the early years. At the same time, there is a transitory increase in inflation, of up to two percentage points in 1991, over its level in the base scenario.

The combined policy changes lead to a significant deterioration of the external accounts with respect to the base scenario. Higher inflation with an unchanged rate of nominal depreciation leads to a slowdown in the rate of real depreciation. Combined with the increased growth, this results in a deterioration of net exports. The resource balance turns into deficit in 1991-93; the current account gradually worsens with respect to the base scenario, with the

FISCAL SCENARIO - KEY ECONOMIC INDICATORS (Deviations from Base Scenario)

	1989	1990	1991	1992	1993	1994	1995
REAL GROWTH RATES							
GDP	0.0%	0.4%	0.6%	0.5%	0.4%	0.1%	0.1%
Consumption	0.0%	0.8%	1.3%	1.4%	1.0%	0.4%	0.3%
Investment	0.0%	0.2%	1.0%	0.5%	1.5%	1.3%	1.5%
Imports	0.0%	0.7%	1.3%	1.2%	0.9%	0.3%	0.2%
Exports	0.0%	-0.3%	-0.8%	-1.0%	-1.0%	-0.9%	-0.7%
Copper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non copper	0.0%	-0.4%	-1.0%	-1.3%	-1.3%	-1.1%	-0.9%
CONSTANT RATIOS TO GDP							
Total Consumption	0.0%	0.3%	0.8%	1.5%	1.9%	2.1%	2.2%
Public	0.0%	0.3%	0.7%	1.2%	1.5%	1.5%	1.5%
Private	0.0%	0.0%	0.1%	0.3%	0.4%	0.6%	0.7%
Total Investment	0.0%	0.0%	0.0%	0.1%	0.3%	0.5%	0.8%
Public	0.0%	0.3%	0.8%	1.0%	1.0%	1.0%	1.0%
Private	0.0%	-0.3%	-0.8%	-0.9%	-0.7%	-0.5%	-0.2%
Total Imports	0.0%	0.1%	0.3%	0.4%	0.6%	0.7%	0.7%
Total Exports	0.0%	-0.2%	-0.6%	-1.1%	-1.6%	-1.9%	-2.3%
CURRENT RATIOS to GDP of:							
Domestic Savings	0.0%	-0.4%	-1.2%	-2.0%	-2.7%	-3.0%	-3.3%
National Savings	0.0%	-0.3%	-1.0%	-1.8%	-2.6%	-3.1%	-3.6%
Public	0.0%	-0.2%	-1.1%	-1.8%	-1.9%	-1.9%	-2.0%
Private	0.0%	-0.1%	0.1%	-0.1%	-0.7%	-1.2%	-1.6%
Total Investment	0.0%	-0.1%	-0.1%	-0.1%	0.0%	0.2%	0.5%
Public	0.0%	0.3%	0.7%	0.9%	0.9%	0.9%	0.9%
Private	0.0%	-0.4%	-0.8%	-1.0%	-0.9%	-0.6%	-0.4%
Resource Balance	0.0%	-0.3%	-1.1%	-1.9%	-2.7%	-3.3%	-3.8%
Current Account Balance	0.0%	-0.3%	-0.9%	-1.7%	-2.6%	-3.3%	-4.1%
Government Deficit	0.0%	0.2%	1.2%	2.1%	2.2%	2.4%	2.7%
Non Fin.Public Sector Deficit	0.0%	0.2%	1.3%	2.2%	2.3%	2.5%	2.8%
Overall Public Deficit	0.0%	0.5%	1.8%	2.7%	2.8%	2.8%	2.9%
Net Public Debt	0.0%	-0.1%	0.8%	2.7%	4.7%	7.2%	9.2%
Domestic	0.0%	0.4%	1.3%	2.1%	1.9%	1.0%	-0.5%
Foreign	0.0%	-0.5%	-0.6%	0.6%	2.8%	6.1%	9.7%
EXTERNAL INDICATORS							
Net External Debt / GDP	0.0%	-0.4%	-0.5%	0.6%	2.8%	6.2%	9.7%
Interest Payments / GDP	0.0%	-0.1%	-0.2%	-0.1%	0.1%	0.2%	0.4%
CA Deficit (in US $ million)	0.0	87.0	311.0	628.0	1000.3	1381.6	1807.7
Net Reserves	0.0	78.9	299.7	393.4	169.7	-399.8	-1259.5
Reserves in months of Imports	0.0	0.1	0.3	0.3	0.0	-0.4	-1.0
Financing gap (in US$ million)		165.8	531.8	740.1	864.1	971.9	1202.6
Public		42.1	310.3	522.8	661.7	812.3	1011.5
Private		123.7	221.5	217.3	202.4	159.6	191.1
PRICES							
Inflation rate (GDP deflator)	0.0%	1.2%	2.0%	1.2%	0.7%	0.2%	0.0%
Nominal exchange rate depreciation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Real exchange rate depreciation	0.0%	-1.0%	-1.7%	-1.1%	-0.6%	-0.2%	0.0%
Real Exchange Rate Index	0	-1	-3	-4	-5	-5	-5
Real Interest Rate	0.0%	0.5%	1.0%	1.0%	1.0%	0.5%	0.5%

deterioration exceeding 4 percent of GDP at the end of the projection period.

The deterioration of public finances is the main reason for the worsening of the external accounts. Overall public savings fall almost 2 percent of GDP from the base case; in fact, they now remain negative throughout the projection period. The overall public deficit gradually widens; in 1995 it is nearly 3% higher than in the base scenario. As a result, at the end of the projection period the public debt/GDP ratio is 9 percent higher than in the base scenario. The increase corresponds entirely to public foreign debt (recall that by assumption 70 percent of the government deficit is financed abroad).

At the end of the projection period, total foreign debt relative to GDP is almost 10 percentage points above its value in the base scenario. Increased external borrowing initially helps raise reserves above their level in the previous run, but by 1994-95 they are lower than in the base scenario, both in absolute and in relative terms. The financing gap rises substantially with respect to the base case, due mainly to the increased external borrowing requirements of the public sector. By 1994-95, they are one billion higher than in the previous scenario.

4 - Concluding remarks

In this paper we have presented a macroeconomic model for Chile that combines a consistent accounting framework with some behavioral relationships. Thus, the model can generate projections that are macroeconomically consistent and at the same time embody some basic economic behavior.

We have also shown how the model can be solved either to find out the macroeconomic policies that should be applied to achieve given macroeconomic targets, or to investigate the effects on such targets of given policy scenarios.

In the paper, we have simulated the model to examine the impact of a fiscal expansion in the context of a fall in world copper prices. Unsurprisingly, our results indicate that, while such a policy could raise economic growth (at least transitorily), it could seriously compromise Chile's external balance over the medium term.

However, important caveats remain. To keep the model simple, some important economic relationships (such as the determination of real interest rates, or of actual GDP as opposed to potential GDP) have not been explicitly introduced. Such shortcomings will be corrected in the next stage of the ongoing modelling effort, of which this model is a preliminary step.

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APPENDIX A

The simulation model

Table A1

List of equations

I - BUDGET CONSTRAINTS

I.1 - The Government

Current Account

(1) $FY_g + TD_{pr} + TD_o + TI + Div_o =$

$$i \cdot B_{g(-1)} + i \cdot CR_{g(-1)} + i \cdot DC_{g(-1)} + e \cdot i^* \cdot BF_{g(-1)}$$

$$+ [GTR_{pr} + GTR_{cb} - e \cdot FTR_g] + Sub + C_g + S_g$$

Capital Account

(2) $S_g + \Delta DC_g + \Delta CR_g + \Delta B_g + e \cdot \Delta BF_g = KTR_o + KTR_{pr} + I_g$

Notes:

The current account determines S_g.
The capital account is not used in the normative closure. (It determines ΔB_g in the positive closure).

I.2 - The Public Enterprises

Current Account

(3) $FY_{o,cop} + FY_{o,ncop} =$

$$TD_o + i \cdot B_{o(-1)} + i \cdot CR_{o(-1)} + e \cdot i^* \cdot BF_{o(-1)} + Div_o + OTR_{pr} + S_o$$

Capital account

(4) $S_o + KTR_o + \Delta B_o + \Delta CR_o + e \cdot \Delta BF_o + e \cdot Cgain_o = I_o$

Notes:

The current account determines S_o.
The capital account determines ΔCR_o.

I.3 - The Central Bank

Current account

(5) $e \cdot i^*_R \cdot R_{cb(-1)} + i \cdot DC_{(-1)} + GTR_{cb} = i \cdot B_{cb(-1)} + e \cdot i^* \cdot BF_{cb(-1)} + \Delta S_{cb}$

Capital account

(6) $\Delta S_{cb} + \Delta H + \Delta B_{cb} + e \cdot \Delta BF_{cb} + e \cdot Cgain_{cb} = e \cdot \Delta R_{cb} + \Delta DC$

Notes:

The current account determines ΔS_{cb}.
The capital account determines ΔDC.
With an interest spread, i^*_R can be different from i^*.

I.4 - The Banking System

Current account

(7) $i \cdot CR(-1) = i \cdot DC_{bs(-1)} + e \cdot i^* \cdot BF_{bs(-1)} + Div_{bs} + \Delta S_{bs}$

Capital account

(8) $\Delta DC_{bs} + \Delta DEP + e \cdot \Delta BF_{bs} + e \cdot Cgain_{bs} + \Delta S_{bs} = \Delta CR + \Delta H_{bs}$

Notes:

The current account determines ΔS_{bs}.
The capital account determines ΔDC_{bs} in the normative closure (ΔCR in the positive closure).

I.5 - The Balance of Payments (in foreign currency terms)

Current account

(9) $MGNFS + i^* \cdot [BF_{(-1)} + R_{cb(-1)}] + rDFI =$

$$(XCOP + XOGNFS) + (FTR_g + FTR_{pr}) + i^*_R \cdot R_{cb(-1)} + S_f$$

Capital account

(10) $\Delta BF + Conv + DFInconv = S_f$

Notes:

The current account determines S_f.
The capital account determines ΔBF.

I.6 - The Private Sector

Current account

(11) $FY_{pr} + i \cdot B_{(-1)} + GTR_{pr} + e \cdot FTR_{pr} + OTR_{pr} + Div_{bs} = TD_{pr}$

$$+ i \cdot CR_{pr(-1)} + e \cdot i^* \cdot BF_{pr(-1)} + e \cdot rDFI + C_{pr} + S_{pr}$$

Capital account

(12) $S_{pr} + KTR_{pr} + \Delta CR_{pr} + e\cdot\Delta BF_{pr} + e\cdot Cgain_{pr} + e\cdot(DFIconv+DFInconv)$

$$= I_{pr} + \Delta B + \Delta M$$

Notes:
The current account determines S_{pr}.
The capital account determines ΔB_{pr} in the normative closure (it is not used in the positive closure).

II - Structural equations

		Determines
II.1 - Goods market and price block		
(13)	$y_{t+1} = y_t+(i_{g,t}+i_{o,t}+i_{pr,t})/ICOR$	$i_{g,t}$ (y_{t+1} in positive)
(14)	$y + mgnfs = c_g + c_{pr} + i_g + i_o + i_{pr} + xcop + xncop$	c_g (i_{pr} in positive)
(15)	$mgnfs_t = mgnfs_{t-1}\cdot(mgnfs_{t-1}/mgnfs_{t-2})^{\mu 0}\cdot(y_t/y_{t-1})^{\mu 1}\cdot(ereal_t/ereal_{t-1})^{\mu 2}$	$mgnfs_t$
(16)	$xncop_t = xncop_{t-1}\cdot(xncop_{t-1}/xncop_{t-2})^{x0}\cdot(1+g_x)\cdot[(e_t\cdot p^*_{xo,t}/p_t)/(e_{t-1}\cdot p^*_{xo,t-1}/p_{t-1})]^{x1}$	$xncop_t$
(17)	$c_{pr,t} = c_{pr,t-1}\cdot(c_{pr,t-1}/c_{pr,t-2})^{1-\alpha}\cdot(yd_t/yd_{t-1})^{\alpha}$	c_{pr}
(18)	$yd_t = [FY_{pr,t}+GTR_{pr,t}+e\cdot FTR_{pr,t}+OTR_{pr,t}+Div_{bs,t}-TD_{pr,t}-e\cdot rDFI]/cpi_t + (i_t-\pi_{cpi,t})\cdot(B_{t-1}-CR_{pr,t-1})/cpi_t - \pi_{cpi,t}\cdot(M_{t-1}/cpi_t) - [i+i^*_t - (e_{t-1}/e_t)\cdot(1+\pi_{cpi,t})]\cdot(BF_{pr,t-1}/cpi_t)$	yd
(19)	$i_o = \sigma_o\cdot y$	i_o
(20)	$Y = C_g+C_{pr} + (I_g+I_o+I_{pr}) + e\cdot(MGNFS-XCOP-XNCOP)$	C_{pr}
(21)	$C_g = c_g\cdot p$	C_g
(22)	$I_g = p_I\cdot i_g$	I_g
(23)	$I_o = p_I\cdot i_o$	I_o

		Determines
(24)	$I_{pr} = p_I \cdot i_{pr}$	I_{pr}
(25)	$Y = p \cdot y$	Y
(26)	$XCOP = p^*_{cop} \cdot xcop$	XCOP
(27)	$XNCOP = p^*_{xo} \cdot xncop$	XNCOP
(28)	$MGNFS = p^*_M \cdot mgnfs$	MGNFS
(29)	$p_c = c_{pr}/c_{pr}$	p_c
(30)	$cpi = p^{\theta}(e \cdot p^*_M)^{1-\theta}$	cpi
(31)	$p_I = p^{\gamma}(e \cdot p^*_M)^{1-\gamma}$	p_I
(32)	$ereal = e \cdot p^*_M/p$	e (ereal in positive)

II.2 - Money market

(33)	$H = [h+\rho(1-h)] \cdot M$	H (M in positive)
(34)	$Mav_t/p_t = v_t \cdot (Mav_{t-1}/p_{t-1})^{h0} \cdot y_t^{h1} \cdot (1+i_t)^{h2}$	M (p in positive)
(35)	$H_{pr} = h \cdot M$	H_{pr}
(36)	$DEP = (1-h) \cdot M$	DEP
(37)	$H_{bs} = \rho \cdot DEP$	H_{bs}
(38)	$i = (1+rint) \cdot (1+\pi) - 1$	i

II.3 - Central Bank Credit market

(39)	$DC = DC_g + DC_{bs}$	DC_g (DC_{bs} in positive)

II.4 - Bank Credit Market

(40)	$CR = CR_g + CR_o + CR_{pr}$	CR_g (CR_{pr} in positive)

II.5 - Domestic debt market

(41)	$B_g + B_o + B_{cb} = B$	B_g (B in positive)
(42)	$B_{cb} = B_{cb(-1)} \cdot (\lambda_{pr}/\lambda_{pr(-1)}) \cdot (Y/Y(-1)) + Conv_{cb} - Cgain_{cb}$	B_{cb}
(43)	$\Delta B_o = \lambda_o \cdot [I_o - KTR_o - S_o]$	B_o

Determines

II.6 - Foreign assets market

(44) $BF = BF_g + BF_o + BF_{bs} + BF_{pr} + BF_{cb} - Rcb$ BF_g (R_{cb} in positive)

(45) $BF_{pr} = BF_{pr(-1)} \cdot (\Phi_{pr}/\Phi_{pr(-1)}) \cdot (Y/Y(-1)) \cdot (e(-1)/e) - Conv_{pr}$ BF_{pr}

(46) $BF_{bs} = BF_{bs(-1)} \cdot (\Phi_{bs}/\Phi_{bs(-1)}) \cdot (DEP/DEP(-1)) \cdot (e(-1)/e) - Conv_{bs}$ BF_{bs}

(47) $BF_{cb} = BF_{cb(-1} \cdot (\Phi_{cb}/\Phi_{cb(-1)}) \cdot (Y/Y(-1)) \cdot (e(-1)/e) - Conv_{cb}$ BF_{cb}

(48) $\Delta BF_o = \Phi_o \cdot (I_o - KTR_o - S_o)/e - Conv_o$ BF_o

III - CLOSING EQUATIONS

III.A - Normative model

(49a) $y_t = y_{t-1} \cdot (1+g_y)$ y_t

(50a) $p_t = p_{t-1} \cdot (1+g_p)$ p_t

(51a) $i_{pr} = \sigma_{pr} \cdot y$ i_{pr}

(52a) $R_{cb} = months \cdot (MGNFS/12)$ R_{cb}

(53a) $CR = \beta \cdot (1-\rho) \cdot DEP_{pr}$ CR

(54a) $CR_{pr} = \beta_{pr} \cdot Y$ CR_{pr}

III.B - Positive model

(49b) $c_g = \alpha_g \cdot y$ c_g

(50b) $i_g = \sigma_g \cdot y$ i_g

(51b) $H_t = H_{t-1} \cdot (1+g_h)$ H_t

(52b) $\Delta BF_g = \Phi_g \cdot [I_g + KTR_o + KTR_{pr} - S_g]/e$ BF_g

(53b) $\Delta DC_g = \delta_g \cdot [I_g + KTR_o + KTR_{pr} - S_g]$ DC_g

(54b) $\Delta CR_g = \beta_g \cdot [I_g + KTR_o + KTR_{pr} - S_g]$ CR_g

		Determines
IV - Additional relations		
IV.1 - Other public sector variables		
(55)	$FY_g = \gamma_g \cdot (Y-TI+Sub)$	FY_g
(56)	$TD_{pr} = \tau_D \cdot FY_{pr}$	TD_{pr}
(57)	$TD_o = \tau_{Do} \cdot (FY_{o,cop}+FY_{o,ncop})$	TD_o
(58)	$TI = \tau_I \cdot Y$	TI
(59)	$Sub = \tau_S \cdot Y$	Sub
(60)	$GTR_{pr} = z_{pr} \cdot Y$	GTR_{pr}
(61)	$Div_o = z_o \cdot (FY_{o,cop}+FY_{o,ncop})$	Div_o
(62)	$GTR_{cb} = z_{cb} \cdot e \cdot i^* \cdot TBond$	GTR_{cb}
(63)	$OTR_{pr} = z_{opr} \cdot FY_{o,ncop}$	OTR_{pr}
(64)	$KTR_{pr} = k_{pr} \cdot I_{pr}$	KTR_{pr}
(65)	$KTR_o = k_o \cdot I_o$	KTR_o
(66)	$FY_{o,cop} = \{e \cdot p^*_{cop} - \gamma_{cop} \cdot [p^s (e \cdot p^*_{cop})^{1-s}]\} \cdot y_{gcop}$	$FY_{o,cop}$
(67)	$FY_{o,ncop} = \gamma_{ncop} \cdot (Y-TI+Sub)$	$FY_{o,ncop}$
IV.2 - Other variables		
(68)	$FY_{pr} = Y-TI+Sub-FY_g-FY_{o,ncop}-FY_{o,cop}$	FY_{pr}
(69)	$Div_{bs} = z_{bs} \cdot [i \cdot CR(-1)-i \cdot DC_{bs(-1)}-e \cdot i^* \cdot BF_{bs(-1)}]$	Div_{bs}
(70)	$Cgain_o = kgain \cdot Conv_o$	$Cgain_o$
(71)	$Cgain_{cb} = kgain \cdot Conv_{cb} + (1-kgain) \cdot Buyback + cbfee \cdot Ch18$	$Cgain_{cb}$
(72)	$Cgain_{bs} = kgain \cdot Conv_{bs}$	$Cgain_{bs}$
(73)	$Cgain_{pr} = Conv - DFIconv - (Cgain_o+Cgain_{cb}+Cgain_{bs})$	$Cgain_{pr}$
(74)	$Mav_t = M_t^{1/2} \cdot M_{t-1}^{1/2}$	Mav
(75)	$e_{eop,t} = e_t^2 / e_{eop,t-1}$	e_{eop}

List of parameters

cbfee = Central Bank's fee on Chapter 18 debt conversions (% of debt nominal)
gh = rate of growth of the money base (positive closure only)
gp = inflation rate (normative closure only)
gx = exogenous real noncopper export growth
gy = real GDP growth rate (normative closure only)
h = share of currency in total money holdings
h0 = elasticity of money demand w.r.t. lagged real money stock
h1 = elasticity of money demand w.r.t. real GDP
h2 = elasticity of money demand w.r.t. nominal interest rate
ICOR = incremental capital/output ratio
kgain = capital gain on debt conversion accruing to the debtor (% of nominal)
kpr = % of private investment financed by capital transfers from government
ko = % of public enterprises' investment financed by capital transfers
months = months of imports covered by reserves (normative closure only)
s = share of noncopper costs in CODELCO costs
x0 = elasticity of noncopper exports w.r.t. lagged noncopper exports
x1 = elasticity of noncopper exports w.r.t. relative prices
zbs = % of Banking System's profits distributed as dividends
zcb = % of interest accrued on TBond that is transfered to Central Bank
zo = % of public enterprises' value added transfered to Government
zopr = % of public enterprises' value added transfered to private sector
zpr = ratio of government transfers to private sector to GDP

α = elasticity of private consumption w.r.t. current real disposable income
αg = share of public consumption in real GDP (positive closure only)
β = ratio of banking system credit to free assets (normative closure only)
βg = % of government deficit financed by bank credit (positive closure only)
βpr = ratio of bank credit to the private sector to GDP (normative closure only)
δg = % of government deficit financed by Central Bank (positive closure only)
ϕpr = ratio of private sector's foreign debt to GDP
ϕbs = ratio of Banks' foreign debt to free assets
ϕcb = ratio of Central Bank's foreign debt to GDP
ϕg = % of government deficit financed by foreign debt (positive closure only)
ϕo = % of public enterprises' deficit financed by foreign borrowing
γ = share of domestic goods in the investment deflator
γcop = real unit production cost of CODELCO
γg = share of government value added in GDP at factor cost
$\gamma ncop$ = share of public enterprises' noncopper value added in GDP at factor cost
λpr = ratio of domestic debt of the Central Bank to GDP
λo = % of the public enterprises' deficit financed by domestic debt issue
$\mu 0$ = elasticity of real imports w.r.t. lagged imports
$\mu 1$ = elasticity of real imports w.r.t. real GDP
$\mu 2$ = elasticity of real imports w.r.t. the real exchange rate
ρ = required reserve coefficient
σg = share of government investment in real GDP (positive closure only)
σo = share of public enterprises' investment in real GDP
σpr = share of private investment in real GDP (normative closure only)
τD = ratio of private direct taxes to private value added
τDo = ratio of public enterprises' direct taxes to their value added
τI = ratio of indirect taxes to GDP

τS = ratio of subsidies to GDP
θ = share of domestic goods in the consumer price index

APPENDIX B

Historical data set

Construction of the historical data set

In this appendix we describe how a consistent set of data for the years 1987-1989 was constructed. This involved organizing the available statistical information for 1987-88, as well as the preliminary estimates for 1989, in a flow-of-funds accounting framework similar to the one portrayed in Figure 1 in the text.

Table B1 describes in detail the statistical sources for each variable in the model. Below we just give some brief comments on each sector's account, and describe the main data problems that arose.

The government

The government's accounts (Table B2) were constructed basically from the Fiscal Tables (FT) prepared by the Region. As described in the text, the main problem that we encountered was the large discrepancy between the fiscal and National Accounts (NA) information on public consumption. The latter figure is much larger than the former, with the difference exceeding 3 percentage points of GDP in 1987-88. Since our preferred strategy was to replicate both the NA information and the government savings figure from FT, the solution we adopted was to modify the fiscal tables by using the NA figure for public consumption. The government's current account is then closed leaving current transfers to the private sector as the residual variable. Obviously, the resulting figure for this item will be much lower than that reported in FT due to the public consumption adjustment. To explicitly reflect this fact, we created an artificial variable (denoted GTR_{res} in Table B2) which represents a 'residual' (negative) transfer to the private sector, whose value equals the public consumption discrepancy.

Needless to say, this procedure may introduce distortions in the structure of public expenditure and also in private disposable income, whose resulting figures should be regarded as highly tentative in lack of a more satisfactory reconciliation of fiscal and NA information.

Total interest payments figures are taken from FT. Their breakdown by financial instrument had to be estimated by applying an appropriate interest rate to the corresponding previous period stock. Payments on domestic debt are then obtained as a residual to match the FT total interest payments. While the resulting figures on interest payments on foreign debt seem consistent with the information supplied by the Central Bank data, the figures for domestic interest payments may be somewhat unreliable (although their total will be approximately right), due also to the possible unreliability of the stock figures used in the calculations (see below).

The government's capital account is closed by leaving domestic debt issue as the residual. It may be worth noting how the figures on Central Bank financing were obtained. From the Central Bank balance sheets constructed by the IMF we can obtain the stocks of net credit to the nonfinancial public sector. Under the assumption that public enterprises do not receive any financing from the Central Bank, this can be identified with credit to the government. However, the stocks reported by the IMF include some items denominated in foreign currency, whose domestic currency value changes over time due not only to financing flows but also to exchange rate changes. To arrive at figures for the actual credit flow, we substracted from the change in stocks (in domestic currency) this revaluation effect, which can be also obtained from the data source.

The Public Enterprises

From the same basic source (FT), we constructed the Public Enterprises' accounts (Table B3). Their factor income is given by their operating surplus before taxes and transfers and interest payments.

The main issue here was the breakdown of the item 'taxes and current transfers' reported by the source, which includes profit and other transfers to both the Government and the private sector. The transfer to the private sector can be estimated from IMF data, while profit tranfers to the Government (Div_o) are reported in FT. We assumed that the remaining figure represented direct taxes on the public firms (TD_o); from this latter figure and the total direct tax revenue in FT, we can then obtain the direct taxes paid by the private sector (TD_{pr}). This procedure yields a surprisingly low value for TD_{pr} (about 2% of GDP). Although this is not inconsistent with the large weight of copper taxes on total tax revenues in recent years, it may also reflect a misclassification of some public firm transfers as direct taxes. This is obviously of no consequence for the fiscal accounts, but does affect the private sector's disposable income through its effect on the resulting figure for private direct taxes.

Interest payments are taken from FT. The 1988 figure for payments to the Banking System was used to estimate the corresponding previous period stock of Bank credit, by dividing by the appropriate interest rate (an average of rates on deposits and liabilities of the Banking System). Finally, the current account of the public enterprises (equation 3 in Table A1) is closed with savings S_o as the residual.

The capital account was also constructed from FT data. The item 'net capital revenue' of the public enterprises in FT is assumed to reflect capital

transfers from the government. The capital gain on external debt conversion was estimated at 12% of the nominal converted[35]. The external debt financing reported by FT was very different from that obtained from the debt stocks reported by BBCC, even after taking into account debt conversions (which are almost negligible for the public enterprises); we decided to use the FT information, which in principle should be more accurate. The residual variable in the account is domestic debt issue (ΔB_o).

The Central Bank

In the cases of the Central Bank and the Banking System accounts, it is important to note that the capital account estimates probably are more reliable than those of the current account variables. The reason is that most of the latter are interest payments constructed by imputing an interest rate to previous period stocks. In contrast, the capital account figures were obtained from balance sheets prepared by the IMF.

Thus, all items in the Central Bank's current account (Table B4) were estimated in that manner, with the exception on interest on domestic debt ($i \cdot B_{cb}$) which is the residual variable in the account. The savings figure (S_{cb}) is obtained from the capital account, where it plays the role of residual. The capital gain on debt conversion was estimated as 20 percent of the nominal converted through all Chapter 18 operations (regardless of whose debt is being converted; this is the so-called 'Central Bank fee') plus 100 percent of the net buybacks performed, plus 12 percent of the Central Bank debt converted through all other channels. The resulting capital gain is fairly large, close to 2% of

[35] This figure, as well as others related to debt conversion, was obtained from data in Larrain (1988).

GDP in 1988. The remaining items in the capital account were constructed from the stock figures in the IMF's balance sheets.

The Banking System

Similar remarks apply to the Banking System's accounts (Table B5). Interest payments and receipts are constructed from stock data; the residual variable in the current account is the dividend paid to the private sector (Div_{bs}), while the savings figure (S_{bs}) is the closing item in the capital account. We may note that the very large dividend that results in 1987 seems to be due mainly to the unusual flow of Central Bank credit (reported by the IMF) for that year.

We should note that private deposits (DEP) refer to demand deposits only, on which no interest is paid; the remaining deposits are netted out in net credit to the private sector CR_{pr}. Similarly, the concept of reserves used here refers only to non-interest earning reserves (which correspond to reserves on demand deposits only). The capital gain from debt conversion was estimated at 12 percent of the nominal conversion. Finally, it is important to note that the Banking System definition used here includes the state-owned Banco del Estado.

The Balance of Payments

The external accounts (Table B6) need little comment. The closing variable in the current account is foreign savings. The capital account is closed with net debt finance (Fin), in turn equal to the actual change in net debt (ΔBF) plus debt conversion (Conv). We should emphasize that Fin is net of reserve changes (just as the net foreign debt stock BF is net of foreign reserves). On the other hand, the stock figures for foreign debt by sector were obtained from the Central Bank of Chile.

As described in the text, the actual change in net foreign debt should equal the financing flow from the capital account in the Balance of Payments minus the net debt converted. As it can be seen in the table, this does not hold in practice. There is a nonnegligible difference between the actual debt figures and those that would result from the financing flows and conversion operations reported by the Central Bank. Changes in cross-exchange rates that affect the dollar value of the external debt stocks, as well as unrecorded short-term operations, are probably the main source of the discrepancy. In order to reproduce the BOP figures, we decided to ignore the debt flow implied by the foreign debt stocks reported by the Central Bank.[36]

The private sector

The private sector accounts appear in Table B7. Private value added was computed as the difference between GDP at factor cost and value added by the Government and the public enterprises. Since the latter excludes wage payments, these are automatically included in private value added.

At this stage, the only unknown variables are private consumption and investment. They are respectively obtained as the difference between total consumption and investment in NA and consumption and investment of the public sector(s). The private current account is closed with private savings. Capital gains from debt conversion were computed as the total net conversion, minus the direct foreign investment inflow for conversion, minus the gains accruing to the other economic sectors. As noted in the text, they are overestimated due to the use of private illegal assets in the conversions. Finally, the capital account

[36] In particular, the private sector's foreign debt flow was the residual item to match the total debt flow.

of the private sector can be shown to be a linear combination of the National Accounts income-expenditure identity and the accounts of the other sectors; therefore it is not an independent equation and does not require of any residual variable to be satisfied.

Table B1

Statistical sources for historical data

Variable	Source
Government account	
FYg	FT Table 1 (Sales of g&s plus other nontax revenue)
TD	FT Table 1 (Direct taxes+Soc. Sec. contributions)
TDo	Estimated (Note 1)
TDpr	Derived (TD-TDo)
TI	FT Table 1
Divo	FT Table 1 (Profit transfers from gov. enterp.)
INTg	FT Table 1 (Interest exc. monetary adjustment)
i•DCg	Estimated (Note 3)
i•Bg	Derived (INTg-i•DCg-i•CRg-e•i*•BFg)
i•CRg	Estimated (Note 3)
e•i*•BFg	Estimated (Note 3)
GTR	Residual
e•FTRg	From Balance of Payments (converted at average e)
GTRcb	Estimated at zero
GTRpr	Derived (GTR+e•FTRg-GTRcb-GTRres)
GTRres	Estimated (Note 4)
Sub	Estimated (Note 2)
Cg	From NA
Sg	FT Table 1
KTR	Derived (KTRpr+KTRo)
KTRpr	Estimated at zero
KTRo	FT Table 2 (Net capital revenue of the PE's)
Ig	FT Table 1
ΔDCg	From Central Bank account
ΔCRg	From Banking System account
e•ΔBFg	BBCC
ΔBg	Residual

Table B1 (continued)

Variable	Source
Public Enterprises account	
FYo	FT Table 2 (Current rev.-transfer receipts-purchases of g&s)
FYo,cop	FT Table 2-A (Current rev.-transfer receipts-purchases of g&s)
FYo,ncop	Derived (FYo-FYo,cop)
TDo	From Government Table
INTo	FT Table 2
i•Bo	Derived (INTo-i•CRo-e•i*•BFo)
i•CRo	FT Table 2
e•i*•Bo	FT Table 2
OTRpr	IMF EBS/89/193 Table 6 (1989 estimated)
Divo	From Government Table
So	Residual
KTRo	From Government Table
Io	FT Table 2
ΔBo	Residual
ΔCRo	FT Table 2
e•ΔBFo	FT Table 2
e•Cgaino	Estimated
Central Bank account	
e•i*•Rcb	Estimated (Note 3)
i•DC	Derived (i•DCg+i•DCbs)
i•DCg	From Government account
i•DCbs	From Banking System account
GTRcb	From Government account
e•i*•BFcb	Estimated (Note 3)
i•Bcb	Residual
Scb	From capital account
e•ΔRcb	BBCC
ΔDC	Derived (ΔDCg+ΔDCbs)
ΔDCg	IMF RED 10/13/89 Table 52 (1989 estimated)
ΔDCbs	IMF RED 10/13/89 Table 52 (1989 estimated)
ΔH	Derived (ΔHpr+ΔHbs)
ΔHpr	IMF RED 10/13/89 Table 52 (1989 from BBCC)
ΔHbs	Estimated (10% of DEP)
e•ΔBFcb	BBCC
ΔBcb	IMF RED 10/13/89 Table 52 (1989 estimated)
Scb	Residual
e•Cgaincb	Estimated

Table B1 (continued)

Variable	Source
Banking System account	
i•CR	Derived (i•CRg+i•CRo+i•CRpr)
i•CRg	From Government account
i•CRo	From Public Enterprises account
i•CRpr	From Private sector account
i•DCbs	Estimated (Note 3)
e•i*•BFbs	Estimated (Note 3)
Divbs	Residual
Sbs	From capital account
ΔCR	IMF RED 10/13/89 Tables 52 and 53 (1989 estimated)
ΔCRg	Derived (ΔCR-ΔCRo-ΔCRpr)
ΔCRo	From Public Enterprises account
ΔCRpr	IMF RED 10/13/89 Tables 52 and 53 (1989 estimated)
ΔHbs	From Central Bank account
ΔDCbs	From Central Bank account
e•ΔBFbs	BBCC
ΔDEP	BBCC
Sbs	Residual
e•Cgainbs	Estimated
Balance of Payments	
XGNFS	Derived (Xcop+Xncop)
Xcop	RMSM country run
Xncop	RMSM country run
MGNFS	RMSM country run
rDFI	RMSM country run
i*•BF	RMSM country run
FTR	Derived (FTRg+FTRpr)
FTRg	RMSM country run
FTRpr	RMSM country run
Sf	Residual
DFI	Derived (DFIconv+DFInconv)
DFIconv	Estimated (88% of CHapter 19 conversions)
DFInconv	RMSM country run
ΔBF	Derived (Fin-Conv)
Fin	Residual
Conv	BBCC
Counterpart	Derived (Conv-DFIconv)

Table B1 (continued)

Variable	Source
BF	Derived (BFg+BFo+BFcb+BFbs+BFpr-Rcb)
Rcb	BBCC
BFg	BBCC
BFo	BBCC
BFcb	BBCC
BFbs	BBCC
BFpr	BBCC
Private sector account	
FYpr	Derived (GDP+Sub-TI-FYg-FYo; GDP from NA)
i•Bpr	Derived (i•Bg+i•Bo+i•Bcb)
GTRpr	From Government account
GTRres	From Government account
OTRpr	From Public Enterprises account
e•FTRpr	From Balance of Payments (converted at average e)
Divbs	From Banking System account
TDpr	From Government account
Cpr	Derived (Total consumption from NA-Cg)
i•CRpr	Estimated (Note 3)
e•rDFI	From Balance of Payments (converted at average e)
e•i*•BFpr	Derived (e•i*•BF-e•i*•BFg-e•i*•BFo-e•i*•BFcb-e•i*•BFbs+e•i*•Rcb)
Spr	Residual
KTRpr	From Government account
ΔCRpr	From Banking System account
e•ΔBFpr	Derived (e•ΔBF-e•ΔBFg-e•ΔBFo-e•ΔBFcb-e•ΔBFbs+e•ΔRcb)
e•DFIconv	From Balance of Payments (converted at average e)
e•DFInconv	From Balance of Payments (converted at average e)
e•Cgainpr	Derived(e•[Conv-DFIconv-Cgaino-Cgaincb-Cgainbs])
Ipr	Derived (Total investment from NA-Ig-Io)
ΔBpr	Derived (ΔBg+ΔBo+ΔBcb)
ΔM	Derived (ΔHpr+ΔDEP)

Table B1 (concluded)

Abreviations for sources

BBCC - Boletin del Banco Central de Chile
FT - Fiscal Tables 11/29/89
IGF - Informe de la Gestion Financiera del Estado
NA - National Accounts

Notes

1 - Calculation of TDo: in FS Table 2, we substract 'Transfer receipts' from 'Taxes and Transfer Payments'. The resulting net figure is assumed to equal TDo+Divo+OTRpr. Since Divo and OTRpr are known, this gives TDc.

2 - Calculation of Sub: from IMF RED 10/13/89 Table 29 we obtain TI-Sub. Since TI is known, this gives Sub.

3 - Calculation of interest payments: except where otherwise indicated, interest payments on domestic and foreign assets and liabilities were estimated by multiplying the previous end-of-period stocks (see note 5 below) by the appropriate interest rates. For domestic instruments, the latter were obtained from IMF RED 10/13/89 Table 51, as an average of deposit and loan rates. For foreign debt, we used the implicit rate that results from dividing total interest paid by the previous total debt stock.

4 - Calculation of GTRres: it is derived as the difference between Cg from FT Table 1 (Wages and Salaries+Purchases of g&s) and Cg from NA.

5 - Calculation of CRg, CRo, and Bg: from IMF RED 10/13/89 Tables 52 and 53, the total CRg+CRo can be obtained. Its breakdown, however, is not available. For 1988, we estimated the stock CRo (and thus CRg) dividing i•CRo by the corresponding interest rate. The stocks for previous years can then be obtained from the flows dCRg and dCRo. In particular, this allows calculation of i•CRg, from which i•Bg also follows. This latter figure was then used to estimate the stock Bg.

APPENDIX C

Simulation results: base scenario

Table B2

GOVERNMENT % OF GDP

	1987	1988	1989
Current Revenue GCVT.	28.4%	28.7%	25.8%
Value Added	2.8%	2.8%	2.4%
Direct Taxes	6.5%	9.4%	7.8%
Direct Taxes fr. PR	1.3%	2.3%	1.9%
Direct Taxes fr. PEs	5.1%	7.1%	5.9%
Indirect Taxes	17.3%	14.5%	13.9%
Dividends fr. PEs	1.8%	2.0%	1.7%
Current Expenditures GOVT.	25.9%	22.7%	19.9%
Interest Payments to:	2.3%	2.9%	2.1%
Central Bank	0.2%	0.0%	-0.7%
Domestic Debt	0.8%	1.5%	1.9%
Banking System	0.1%	0.1%	-0.5%
Foreign Sector	1.2%	1.3%	1.4%
Net Current Govt.Tr.to:	9.0%	6.8%	6.1%
Private Sector	12.6%	10.8%	10.7%
Residual Transfer to PR	-3.3%	-3.5%	-4.0%
Central Bank	0.0%	0.0%	0.0%
Foreign Sector	-0.3%	-0.5%	-0.6%
Government Subsidies	3.5%	3.0%	3.1%
Government Consumption	11.4%	10.5%	9.1%
Government Savings	2.2%	5.4%	5.3%
Capital Expenditure	3.5%	3.5%	2.9%
Net Capital Transfers to:	0.5%	0.6%	0.4%
Public Enterprises	0.5%	0.6%	0.4%
Private Sector	0.0%	0.0%	0.0%
Government Investment	3.0%	2.9%	2.5%
Government Deficit	1.3%	-1.9%	-2.4%
Credit from CB	-1.2%	-4.0%	-1.9%
Credit from BS	0.0%	-3.0%	-1.0%
Net Foreign Debt	2.0%	2.4%	0.6%
Net Domestic Debt	0.5%	2.7%	-0.2%

Table B3

PUBLIC ENTERPRISES % OF GDP

	1987	1988	1989
Current Revenue PE	13.2%	14.3%	11.9%
Value Added of which:	13.2%	14.3%	11.9%
Copper	5.3%	9.3%	8.3%
Non copper	8.0%	5.0%	3.6%
Current Expenditures PE	10.1%	11.6%	9.9%
Direct Taxes	5.1%	7.1%	5.9%
Interest Payments to:	2.0%	1.3%	1.1%
Private Sector	0.0%	0.0%	0.0%
Banking System	0.2%	0.1%	0.1%
Foreign Sector	1.8%	1.2%	1.0%
Current Transfers to PR	1.2%	1.2%	1.2%
Dividents	1.8%	2.0%	1.7%
PEs' Savings	3.2%	2.7%	1.9%
Net Capital Expenditure	3.1%	2.5%	2.0%
PEs' Investment	3.5%	3.1%	2.4%
Net Capital Transfers Govt	-0.5%	-0.6%	-0.4%
PEs' Deficit	-0.1%	-0.3%	0.1%
Borrowing from PR	-0.1%	-0.7%	0.1%
Credit from BS	-0.2%	0.5%	-0.1%
Net Foreign Debt	0.1%	-0.2%	0.0%
Capital gain on debt conv.	0.2%	0.1%	0.0%
Memorandum Items			
CODELCO revenue	11.1%	15.3%	14.0%
CODELCO costs	5.8%	6.0%	5.7%

Table B4

CENTRAL BANK % OF GDP

	1987	1988	1989
CURRENT ACCOUNT			
Current Revenue CB	1.6%	1.6%	0.2%
Interest on Int'l Reserves	0.8%	0.8%	1.0%
Interest on Domestic Loans	0.8%	0.8%	-0.8%
to Government	0.2%	0.0%	-0.7%
to Banking System	0.5%	0.8%	-0.1%
Transfer fr. Government	0.0%	0.0%	0.0%
Current Expenditures CB	3.3%	5.0%	3.4%
Interest on Foreign Debt	2.0%	2.1%	1.6%
Interest on Dom. Debt	1.3%	2.9%	1.8%
Savings of CB	-1.7%	-3.4%	-3.2%
CAPITAL ACCOUNT			
1. Change in Assets	6.2%	-2.1%	-0.9%
Foreign Reserves	0.5%	3.1%	1.5%
Domestic Credit of CB	5.8%	-5.1%	-2.5%
to Government	-1.2%	-4.0%	-1.9%
to Banking System	7.0%	-1.2%	-0.6%
2. Change in Liabilities	6.2%	-2.1%	-0.9%
Base Money	0.6%	1.0%	0.7%
Currency	0.7%	0.8%	0.6%
Bank Reserves	0.0%	0.2%	0.1%
Foreign Debt of CB	2.6%	-4.5%	-5.3%
Capital gain on debt conv.	0.8%	1.7%	0.8%
Domestic Debt of CB	3.9%	3.2%	6.0%
Savings of CB	-1.7%	-3.4%	-3.2%

Table B5

BANKING SYSTEM % OF GDP

	1987	1988	1989
CURRENT ACCOUNT			
Current Revenues BS	10.8%	8.2%	5.4%
Interest on Credit to:	10.8%	8.2%	5.4%
Government	0.1%	0.1%	-0.5%
Public Enterprises	0.2%	0.1%	0.1%
Private Sector	10.5%	8.0%	5.8%
Current Expenditures BS	14.6%	6.1%	4.2%
Interest on Deposits	0.0%	0.0%	0.0%
" " CB Credits	0.5%	0.8%	-0.1%
" " Foreign Debt	2.6%	2.1%	1.6%
Dividends of BS	11.5%	3.2%	2.7%
Savings of BS	-3.9%	2.1%	1.2%
CAPITAL ACCOUNT			
1. Change in Assets	-1.4%	-0.6%	-1.5%
Change in Credits to:	-1.4%	-0.7%	-1.6%
Government	0.0%	-3.0%	-1.0%
Public Enterprises	-0.2%	0.5%	-0.1%
Private Sector	-1.2%	1.8%	-0.5%
Bank Reserves	0.0%	0.2%	0.1%
2. Change in Liabilities	-1.4%	-0.6%	-1.5%
Credit from CB	7.0%	-1.2%	-0.6%
International Debt	-5.0%	-4.3%	-3.1%
Capital gain on debt conv	0.8%	0.6%	0.7%
Deposits	-0.2%	2.2%	0.2%
Savings of BS	-3.9%	2.1%	1.2%

Table B6

BALANCE OF PAYMENTS (in US$ millions)

	1987	1988	1989
Resource Balance	765	1577	968
Exports of which:	6306	8267	9637
Copper exports	2235	341/	4051
Non copper exports	4071	4850	5586
Imports	5541	6690	8669
Net Factor Payments	1701	1919	1959
Interest payments	1640	1796	1832
Interest receipts	153	180	273
Net profit remittances	214	303	400
Foreign Transfers to:	125	177	222
Government	60	114	155
Private Sector	65	63	67
CA Balance	-811	-165	-769
Direct Foreign Investment	834	948	1475
for debt conversion	736	814	1165
other	98	134	310
Net External Debt	-1266	-2661	-2016
Financing flow	713	31	459
Debt conversion	-1979	-2692	-2475
Counterpart,debt conversion	1243	1878	1310
Memorandum Items			
Net Foreign Debt	18098	15798	14022
Net Foreign Reserves	1871	2550	2948
Gross Foreign Debt (ex.IMF)	19969	18348	16970
Government	2993	3512	3676
Public Enterprises	4110	3521	3063
Central Bank	4923	3921	2556
Banking System	4793	3848	3030
Private Sector	3150	3546	4645
Net Debt Conversion	1979	2692	2475
Discrepancy	1170	361	240
Reserves in months of Imp.	4.1	4.6	4.1

Table B6 (continued)

BALANCE OF PAYMENTS	% OF GDP		
	1987	1988	1989
Resource Balance	4.0%	7.1%	3.7%
Exports of which:	33.3%	37.5%	37.1%
Copper exports	11.8%	15.5%	15.6%
Non copper exports	21.5%	22.0%	21.5%
Imports	29.2%	30.3%	33.3%
Net Factor Payments	9.0%	8.7%	7.5%
Interest payments	8.6%	8.1%	7.0%
Interest receipts	0.8%	0.8%	1.0%
Other factor payments	1.1%	1.4%	1.5%
Foreign Transfers to:	0.7%	0.8%	0.9%
Government	0.3%	0.5%	0.6%
Private Sector	0.3%	0.3%	0.3%
CA Balance	-4.3%	-0.7%	-3.0%
Direct Foreign Investment	4.4%	4.3%	5.7%
for debt conversion	3.9%	3.7%	4.5%
other	0.5%	0.6%	1.2%
Net External Debt	-6.7%	-12.1%	-7.8%
Financing flow	3.8%	0.1%	1.8%
Debt conversion	-10.4%	-12.2%	-9.5%
Counterpart,debt conversion	6.6%	8.5%	5.0%

Table B7

PRIVATE SECTOR % OF GDP

	1987	1988	1989
Current Income PR	94.5%	87.8%	89.5%
Private Value Added	70.1%	71.4%	74.9%
Interest Receipts on:	2.1%	4.4%	3.7%
Domestic Debt	2.1%	4.4%	3.7%
Deposits	0.0%	0.0%	0.0%
Transfer Receipts from:	10.8%	8.8%	8.2%
Government	12.6%	10.8%	10.7%
Residual Transfer	-3.3%	-3.5%	-4.0%
Public Enterprises	1.2%	1.2%	1.2%
Foreign Sector	0.3%	0.3%	0.3%
BS Dividends	11.5%	3.2%	2.7%
Current Expenditures	81.7%	78.5%	77.7%
Direct Taxes	1.3%	2.3%	1.9%
Consumption	67.6%	65.4%	67.0%
Interest Payments on:	12.7%	10.8%	8.7%
BS Credits	10.5%	8.0%	5.8%
Dir.For.Investment	1.1%	1.4%	1.5%
Foreign Borrowing	1.1%	1.4%	1.4%
Private Savings	12.9%	9.4%	11.9%
Capital Account			
1. Financing	2.1%	9.9%	10.2%
Capital Transfers fr.Govt.	0.0%	0.0%	0.0%
BS Credits	-1.2%	1.8%	-0.5%
Foreign Debt	-5.8%	-2.3%	1.6%
Capital gain on debt conv.	4.8%	6.1%	3.5%
Dir.For.Inv. of which:	4.4%	4.3%	5.7%
for debt conv.	3.9%	3.7%	4.5%
Other	0.5%	0.6%	1.2%
2. Asset Accumulation	15.0%	19.3%	22.0%
Investment	10.4%	11.0%	15.2%
Domestic Lending	4.2%	5.2%	6.0%
Money Stock	0.4%	3.0%	0.8%

BASE SCENARIO NATIONAL ACCOUNTS, % Rates of Growth

	1989	Projection period 1990	1991	1992	1993	1994	1995
Gross Domestic Product	27.3%	29.9%	24.6%	18.4%	18.1%	18.7%	18.8%
Total Consumption	27.8%	35.5%	25.4%	18.1%	16.8%	17.1%	17.4%
Govt. Consumption	10.7%	32.3%	24.6%	18.4%	18.1%	18.7%	18.8%
PR Consumption	30.6%	35.9%	25.5%	18.0%	16.6%	16.9%	17.2%
Total Investment	50.7%	27.9%	21.7%	14.3%	16.7%	20.5%	20.7%
Govt. Investment	8.9%	34.5%	25.9%	18.7%	18.3%	18.9%	19.1%
PR Investment	76.1%	27.6%	22.0%	14.5%	16.3%	21.0%	21.2%
PEs Investment	-1.1%	22.5%	15.4%	7.9%	18.3%	18.9%	19.1%
Imports	40.0%	43.2%	30.9%	21.8%	21.2%	21.9%	22.0%
Exports of which:	26.0%	31.6%	30.5%	24.4%	24.4%	23.9%	23.4%
Copper	28.1%	0.3%	10.3%	17.8%	22.5%	20.8%	21.9%
Non copper	24.5%	54.2%	40.0%	26.8%	25.0%	24.9%	23.9%
NA in real terms							
Gross Domestic Product	10.0%	4.4%	5.2%	5.5%	4.6%	4.6%	4.6%
Total Consumption	8.1%	3.3%	3.7%	4.3%	4.1%	3.7%	4.0%
Govt. Consumption	0.9%	4.2%	5.2%	5.5%	4.6%	4.6%	4.6%
PR Consumption	9.1%	3.1%	3.4%	4.1%	4.0%	3.5%	3.9%
Total Investment	32.6%	0.4%	1.8%	1.6%	3.3%	6.0%	6.1%
Govt. Investment	-4.1%	5.6%	5.2%	5.5%	4.6%	4.6%	4.6%
PR Investment	55.0%	0.2%	2.0%	1.7%	2.9%	6.4%	6.5%
PEs Investment	-12.9%	-3.8%	-3.5%	-4.1%	4.6%	4.6%	4.6%
Imports	26.3%	5.4%	6.1%	7.4%	6.8%	6.5%	6.6%
Exports of which:	14.8%	11.2%	12.2%	12.2%	8.4%	7.3%	6.8%
Copper	13.4%	4.2%	8.8%	13.2%	3.0%	1.5%	1.9%
Non copper	15.4%	13.8%	13.4%	11.8%	10.2%	9.1%	8.2%
Adjusted Disp. income	16.0%	0.3%	4.2%	5.7%	3.7%	2.5%	4.6%
Price Indices							
GDP deflator	15.8%	24.5%	18.4%	12.2%	12.9%	13.5%	13.5%
Consumption deflator	19.7%	31.8%	21.3%	13.4%	12.1%	12.9%	12.9%
Investment deflator	13.6%	27.4%	19.6%	12.5%	13.0%	13.7%	13.8%
Export deflator	9.7%	18.4%	16.3%	10.9%	14.7%	15.5%	15.6%
" " for copper	13.0%	-3.8%	1.4%	4.1%	18.9%	19.0%	19.6%
" " for others	7.9%	35.5%	23.4%	13.4%	13.4%	14.5%	14.5%
Import deflator	10.9%	36.0%	23.4%	13.4%	13.4%	14.5%	14.5%
Terms of Trade	-1.0%	-12.9%	-5.8%	-2.2%	1.2%	0.9%	1.0%
Real Exchange Rate	-3.5%	8.8%	4.2%	1.0%	0.4%	0.9%	0.8%

BASE SCENARIO CURRENT (Billions of Pesos) & REAL NATIONAL ACCOUNTS

	1989	1990	1991	1992	1993	1994	1995
		Projection period					
Gross Domestic Product	6889.8	8951.0	11149.2	13200.5	15595.2	18508.1	21992.2
Total Consumption	5248.5	7111.5	8918.9	10532.3	12296.6	14397.4	16903.5
Govt. Consumption	629.3	832.4	1038.9	1227.6	1450.4	1721.3	2045.3
PR Consumption	4619.2	6279.0	7882.0	9304.6	10846.3	12676.2	14858.3
Total Investment	1384.8	1770.5	2154.9	2463.9	2876.3	3465.7	4181.8
Govt. Investment	169.6	228.0	287.1	340.7	403.0	479.3	570.7
PR Investment	1049.7	1339.8	1633.9	1870.8	2174.8	2631.3	3188.4
PEs Investment	165.5	202.7	233.9	252.4	298.5	355.0	422.7
Imports	2297.3	3290.6	4307.5	5245.9	6356.1	7750.9	9454.2
Exports of which:	2558.8	3359.6	4382.9	5450.3	6778.3	8395.9	10361.0
Copper	1078.5	1077.0	1188.2	1400.1	1715.5	2071.5	2526.0
Non copper	1480.3	2282.6	3194.8	4050.2	5062.9	6324.5	7835.0
NA in real terms (In Pesos' 1977)							
Gross Domestic Product	470.4	490.9	516.6	544.9	570.2	596.4	624.1
Total Consumption	360.8	372.5	388.2	402.8	419.2	434.6	451.8
Govt. Consumption	43.8	45.6	48.0	50.7	53.0	55.5	58.0
PR Consumption	317.0	326.9	338.2	352.1	366.2	379.2	393.8
Total Investment	102.5	102.9	104.7	106.4	109.9	116.4	123.5
Govt. Investment	12.6	13.3	13.9	14.7	15.4	16.1	16.9
PR Investment	77.7	77.9	79.4	80.8	83.1	88.4	94.1
PEs Investment	12.2	11.8	11.4	10.9	11.4	11.9	12.5
Imports	130.1	137.1	146.4	156.2	166.9	177.8	189.5
Exports of which:	137.2	152.5	171.1	191.9	208.0	223.1	238.3
Copper	38.5	40.1	43.6	49.4	50.9	51.7	52.7
Non copper	98.7	112.4	127.5	142.5	157.1	171.5	185.6
Price Indices							
GDP deflator	14.6	18.2	21.6	24.2	27.3	31.0	35.2
Consumption deflator	14.6	19.2	23.3	26.4	29.6	33.4	37.7
Investment deflator	13.5	17.2	20.6	23.2	26.2	29.8	33.9
Export deflator	18.6	22.0	26.6	28.4	32.6	37.6	43.5
" " for copper	27.9	26.8	27.2	28.3	33.7	40.1	48.0
" " for others	15.0	20.3	26.1	28.4	32.2	36.9	42.2
Import deflator	17.7	24.0	29.6	33.6	38.1	43.6	49.9
Terms of Trade	105.4	91.8	86.5	84.5	85.6	86.3	87.2
Real Exch. Rate (Pim/P)	26.0	28.3	29.5	29.8	29.9	30.2	30.4

BASE SCENARIO GOVERNMENT % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
Current Revenue	25.8%	23.6%	22.7%	22.3%	22.4%	22.5%	22.6%
Factor Income	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Direct Taxes	7.8%	6.1%	5.5%	5.2%	5.3%	5.3%	5.4%
Direct Taxes fr. PR	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Direct Taxes fr. PEs	5.9%	4.2%	3.5%	3.1%	3.3%	3.3%	3.4%
Indirect Taxes	13.9%	13.9%	13.9%	13.9%	13.9%	13.9%	13.9%
Dividends fr. PEs	1.7%	1.2%	1.0%	0.9%	0.9%	0.9%	1.0%
Current Expenditures	20.5%	20.4%	20.3%	20.2%	19.9%	19.9%	19.9%
Interest Payments to:	2.1%	1.1%	1.1%	1.1%	1.0%	1.0%	1.0%
Central Bank	-0.7%	-1.3%	-0.8%	-0.4%	-0.4%	-0.3%	-0.3%
Domestic Debt	1.9%	1.7%	1.0%	0.6%	0.5%	0.4%	0.4%
Banking System	-0.5%	-0.8%	-0.5%	-0.3%	-0.2%	-0.2%	-0.1%
Foreign Sector	1.4%	1.5%	1.4%	1.2%	1.1%	1.1%	1.0%
Net Current Govt.Tr.to:	6.1%	6.3%	6.7%	6.6%	6.4%	6.4%	6.4%
Private Sector	10.7%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Residual Transfer to PR	-4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Central Bank	0.0%	0.0%	0.6%	0.6%	0.6%	0.6%	0.6%
Foreign Sector	-0.6%	-0.5%	-0.7%	-0.8%	-1.0%	-0.9%	-0.9%
Government Subsidies	3.1%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
Government Consumption	9.1%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%
Government Savings	5.8%	3.2%	2.4%	2.1%	2.5%	2.6%	2.7%
Capital Expenditure	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Net Capital Transfers to:	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%
Public Enterprises	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%
Private Sector	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Government Investment	2.5%	2.5%	2.6%	2.6%	2.6%	2.6%	2.6%
Government Deficit	-2.4%	-0.2%	0.5%	0.8%	0.4%	0.3%	0.2%
Credit from CB	-1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Credit from BS	-1.0%	-0.1%	0.1%	0.2%	0.1%	0.1%	0.1%
Net Foreign Debt	0.6%	0.0%	0.4%	0.5%	0.3%	0.2%	0.1%
Net Domestic Debt	-0.2%	-0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Stocks							
Foreign Debt	15.9%	16.1%	13.9%	13.7%	12.4%	12.1%	10.8%
Total Domestic Debt	-1.6%	-1.5%	-1.0%	-0.6%	-0.4%	-0.3%	-0.2%
of which CB Credits	-5.1%	-3.9%	-3.2%	-2.7%	-2.3%	-1.9%	-1.6%
BS Credits	-3.1%	-2.5%	-1.9%	-1.4%	-1.1%	-0.8%	-0.6%
Government Debt	6.6%	4.9%	4.0%	3.4%	2.9%	2.5%	2.1%
Special Debt to CB	28.5%	30.9%	31.6%	31.1%	30.6%	30.2%	29.8%

BASE SCENARIO

PUBLIC ENTERPRISES % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
Current Revenue	11.9%	8.4%	7.0%	6.3%	6.5%	6.7%	6.9%
Factor Income of which:	11.9%	8.4%	7.0%	6.3%	6.5%	6.7%	6.9%
Copper	8.3%	5.2%	3.9%	3.2%	3.4%	3.6%	3.8%
Non copper	3.6%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Current Expenditures	9.9%	7.8%	7.0%	6.4%	6.6%	6.8%	7.0%
Direct Taxes	5.9%	4.2%	3.5%	3.1%	3.3%	3.3%	3.4%
Interest Payments to:	1.1%	1.3%	1.4%	1.3%	1.3%	1.4%	1.5%
Private Sector	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Banking System	0.1%	0.0%	0.2%	0.2%	0.3%	0.4%	0.4%
Foreign Sector	1.0%	1.3%	1.2%	1.1%	1.0%	1.1%	1.1%
Current Transfers to PR	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Dividents	1.7%	1.2%	1.0%	0.9%	0.9%	0.9%	1.0%
Savings	1.9%	0.6%	0.0%	-0.2%	-0.1%	-0.1%	-0.1%
Net Capital Expenditure	2.0%	1.9%	1.8%	1.6%	1.6%	1.6%	1.6%
Investment	2.4%	2.3%	2.1%	1.9%	1.9%	1.9%	1.9%
Net Capital Transfers Govt.	-0.4%	-0.4%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%
Deficit	0.1%	1.3%	1.7%	1.8%	1.7%	1.7%	1.8%
Borrowing from PR	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Credit from BS	-0.1%	0.6%	0.9%	0.9%	0.8%	0.9%	0.9%
Net Foreign Debt	0.0%	0.6%	0.9%	0.9%	0.8%	0.9%	0.9%
Capital gain on debt conv	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stocks							
Domestic Debt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Credit from BS	0.2%	0.8%	1.5%	2.1%	2.7%	3.1%	3.5%
Foreign Debt	13.2%	14.2%	12.8%	13.0%	12.4%	12.7%	12.1%
Memorandum Items							
CODELCO revenue	14.0%	10.5%	9.0%	8.0%	8.0%	8.0%	8.1%
CODELCO costs	5.7%	5.3%	5.1%	4.8%	4.7%	4.5%	4.3%

BAS.. SCENARIO

PUBLIC SECTOR % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
Non Financial Public Sector							
Current Revenue	30.1%	26.5%	25.2%	24.5%	24.7%	24.9%	25.1%
Current Expenditure	22.9%	22.8%	22.8%	22.6%	22.3%	22.5%	22.5%
Savings	7.2%	3.8%	2.5%	1.9%	2.4%	2.4%	2.6%
Capital Expenditure	4.9%	4.8%	4.7%	4.5%	4.5%	4.5%	4.5%
Deficit financed by:	-2.4%	1.1%	2.2%	2.5%	2.1%	2.1%	2.0%
Domestic Debt	-0.1%	-0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Central Bank	-1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Banking Sector	-1.1%	0.6%	1.0%	1.1%	0.9%	1.0%	0.9%
Foreign Debt	0.6%	0.6%	1.2%	1.4%	1.1%	1.1%	1.0%
Capital gain	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Consolidated Public Sector							
(Including Central Bank)							
Current Revenue	31.1%	27.4%	25.9%	24.9%	25.0%	25.2%	25.6%
Current Expenditure	27.0%	28.2%	26.9%	25.3%	24.8%	24.9%	25.0%
Savings	4.1%	-0.9%	-1.1%	-0.4%	0.3%	0.3%	0.6%
Capital Expenditure	4.9%	4.8%	4.7%	4.5%	4.5%	4.5%	4.5%
Deficit	0.8%	5.7%	5.7%	4.8%	4.2%	4.2%	3.9%
Change in Base Money	0.7%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Net Domestic Debt	5.5%	5.3%	6.5%	4.8%	4.2%	3.5%	5.3%
Net Foreign Debt	-6.2%	-0.4%	-1.4%	-0.5%	-0.4%	0.3%	-1.8%
Capital gain on debt conv	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Stocks							
Net Public Debt	46.5%	47.3%	44.2%	43.7%	41.5%	40.7%	38.4%
Domestic	19.1%	20.0%	22.6%	23.9%	24.4%	24.0%	25.5%
Foreign	27.5%	27.3%	21.6%	19.8%	17.2%	16.7%	12.9%

BASE SCENARIO

CENTRAL BANK % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
CURRENT ACCOUNT							
Current Revenue	0.2%	0.1%	0.4%	0.5%	0.5%	0.6%	0.8%
Interest on Int'l Reserves	1.0%	1.0%	1.0%	0.8%	0.8%	0.8%	0.9%
Interest on Domestic Loans	-0.8%	-1.5%	-1.1%	-0.9%	-0.8%	-0.8%	-0.7%
to Government	-0.7%	-1.3%	-0.8%	-0.4%	-0.4%	-0.3%	-0.3%
to Banking System	-0.1%	-0.2%	-0.3%	-0.4%	-0.5%	-0.5%	-0.4%
Transfer fr. Government	0.0%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Current Expenditures	3.4%	4.7%	3.9%	2.8%	2.7%	2.7%	2.7%
Interest on Foreign Debt	1.6%	1.1%	0.9%	0.6%	0.4%	0.4%	0.4%
Interest on Dom. Debt	1.8%	3.6%	3.0%	2.3%	2.3%	2.3%	2.3%
Savings of CB	-3.2%	-4.6%	-3.5%	-2.3%	-2.2%	-2.1%	-2.0%
CAPITAL ACCOUNT							
1. Change in Assets		-0.6%	-1.3%	0.0%	1.0%	1.1%	1.3%
Foreign Reserves	1.6%	0.3%	0.5%	0.9%	1.7%	1.0%	3.1%
Domestic Credit of CB	-2.5%	-0.9%	-1.7%	-0.9%	-0.7%	0.1%	-1.8%
to Government	-1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
to Banking System	-0.6%	-0.9%	-1.7%	-0.9%	-0.7%	0.1%	-1.8%
2. Change in Liabilities	-0.9%	-0.6%	-1.3%	0.0%	1.0%	1.1%	1.3%
Base Money	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%
Currency	0.6%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%
Bank Reserves	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Foreign Debt of CB	-5.3%	-0.7%	-2.1%	-1.1%	0.2%	0.2%	0.2%
Capital gain on debt conv.	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Domestic Debt of CB	6.0%	4.0%	3.8%	2.8%	2.5%	2.6%	2.6%
Savings of CB	-3.2%	-4.6%	-3.5%	-2.3%	-2.2%	-2.1%	-2.0%
STOCKS							
Net Foreign Reserves	12.8%	13.3%	11.7%	11.9%	12.3%	12.8%	14.4%
Domestic Credit to:	-6.0%	-5.5%	-6.1%	-6.0%	-5.8%	-4.9%	-5.8%
Government	-5.1%	-3.9%	-3.2%	-2.7%	-2.3%	-1.9%	-1.6%
Banking System	-0.9%	-1.6%	-3.0%	-3.4%	-3.5%	-2.9%	-4.2%
Special Loan to Govt.	28.5%	30.9%	31.6%	31.1%	30.5%	30.2%	29.8%
Base Money	3.5%	3.2%	3.1%	3.1%	3.1%	3.0%	3.0%
Currency	3.2%	2.9%	2.8%	2.8%	2.8%	2.8%	2.7%
Bank Reserves	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Domestic Debt	14.5%	15.2%	16.0%	16.3%	16.3%	16.3%	16.3%
Foreign Debt	11.1%	10.4%	8.5%	5.0%	4.7%	4.7%	4.4%
Copper Stabilization Fund	21.5%	17.8%	13.9%	10.4%	8.3%	6.8%	5.7%
Memorandum Items							
Inflation Tax	0.50%	0.54%	0.47%	0.43%	0.41%	0.39%	0.37%

BASE SCENARIO

BANKING SYSTEM % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
CURRENT ACCOUNT							
Current Revenues	5.4%	5.5%	3.6%	2.2%	1.9%	1.7%	1.7%
Interest on Credit to:	5.4%	5.5%	3.6%	2.2%	1.9%	1.7%	1.7%
Government	-0.5%	-0.8%	-0.5%	-0.3%	-0.2%	-0.2%	-0.1%
Public Enterprises	0.1%	0.0%	0.2%	0.2%	0.3%	0.4%	0.4%
Private Sector	5.8%	6.3%	3.9%	2.2%	1.8%	1.5%	1.3%
Current Expenditures	4.2%	4.0%	2.2%	1.4%	1.2%	1.1%	1.0%
Interest on Deposits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
" " CB Credits	-0.1%	-0.2%	-0.3%	-0.4%	-0.5%	-0.5%	-0.4%
" " Foreign Debt	1.6%	1.3%	1.1%	1.0%	0.9%	0.9%	0.8%
Dividends of BS	2.7%	2.9%	1.4%	0.8%	0.7%	0.7%	0.6%
Savings of BS	1.2%	1.6%	1.4%	0.8%	0.7%	0.7%	0.6%
CAPITAL ACCOUNT							
1. Change in Assets	-1.5%	0.9%	1.0%	0.8%	0.6%	1.4%	-0.1%
Change in Credits to:	-1.6%	0.8%	1.0%	0.8%	0.6%	1.3%	-0.2%
Government	-1.0%	-0.1%	0.1%	0.2%	0.1%	0.1%	0.1%
Public Enterprises	-0.1%	0.6%	0.9%	0.9%	0.8%	0.9%	0.9%
Private Sector	-0.5%	0.3%	0.0%	-0.3%	-0.4%	0.4%	-1.1%
Bank Reserves	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
2. Change in Liabilities	-1.5%	0.9%	1.0%	0.8%	0.6%	1.4%	-0.1%
Credit from CB	-0.6%	-0.9%	-1.7%	-0.9%	-0.7%	0.1%	-1.8%
International Debt	-3.1%	-0.6%	0.9%	0.4%	0.2%	0.2%	0.6%
Capital gain on debt conv	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Deposits	0.2%	0.7%	0.4%	0.4%	0.4%	0.4%	0.4%
Savings of BS	1.2%	1.6%	1.4%	0.8%	0.7%	0.7%	0.6%
STOCKS							
Credit to Govt.	-3.1%	-2.5%	-1.9%	-1.4%	-1.1%	-0.8%	-0.6%
" " PEs	0.2%	0.8%	1.5%	2.1%	2.7%	3.1%	3.5%
" " PR	25.0%	19.5%	15.7%	12.9%	10.6%	9.3%	6.7%
Bank Reserves	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Credits from CB	-0.9%	-1.6%	-3.0%	-3.4%	-3.5%	-2.9%	-4.2%
Foreign Debt	13.1%	12.6%	11.5%	11.3%	10.2%	9.9%	9.4%
Deposits	2.9%	2.9%	2.8%	2.8%	2.8%	2.8%	2.7%

BASE SCENARIO

BALANCE OF PAYMENTS % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
Resource Balance	8.7%	0.8%	0.7%	1.5%	2.7%	3.5%	4.1%
Exports of which:	37.1%	37.5%	39.3%	41.3%	43.5%	45.4%	47.1%
Copper exports	15.6%	12.0%	10.7%	10.6%	11.0%	11.2%	11.5%
Non copper exports	21.5%	25.5%	28.7%	30.7%	32.5%	34.2%	35.6%
Imports	28.3%	36.8%	38.6%	39.7%	40.8%	41.9%	43.0%
Net Factor Payments	7.5%	7.6%	7.4%	7.6%	7.8%	8.9%	8.4%
Interest payments	7.0%	7.1%	6.6%	6.0%	5.4%	5.5%	5.6%
Interest receipts	1.0%	1.0%	1.0%	0.8%	0.8%	0.8%	0.9%
Other factor payments	1.5%	1.5%	1.7%	2.4%	3.1%	4.2%	3.7%
Foreign Transfers to:	0.9%	0.8%	1.0%	1.1%	1.4%	1.3%	1.3%
Government	0.6%	0.6%	0.7%	0.8%	1.0%	0.9%	0.9%
Private Sector	0.3%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%
CA Balance	-3.0%	-5.9%	-5.7%	-4.9%	-3.7%	-4.1%	-3.0%
Direct Foreign Investment	5.7%	4.2%	2.5%	2.0%	1.2%	1.2%	1.3%
for debt conversion	4.5%	3.4%	1.6%	0.7%	0.0%	0.0%	0.0%
other	1.2%	0.9%	0.9%	1.2%	1.2%	1.2%	1.3%
Net External Debt	-7.8%	1.2%	3.0%	2.8%	2.5%	2.8%	1.8%
Financing flow	1.8%	5.1%	4.8%	3.7%	2.5%	2.8%	1.8%
Debt conversion	-9.5%	-3.8%	-1.8%	-0.8%	0.0%	0.0%	0.0%
Counterpart,debt conversion	5.0%	0.5%	0.2%	0.1%	0.0%	0.0%	0.0%
Memorandum Items							
Net Foreign Debt	60.6%	62.9%	56.1%	55.6%	51.9%	52.6%	48.2%
Foreign Reserves	12.8%	13.8%	11.7%	11.9%	12.3%	12.8%	14.4%
Gross Foreign Debt (ex.IMF)	73.4%	76.2%	67.7%	67.5%	64.2%	65.4%	62.7%
Government	15.9%	16.1%	13.9%	13.7%	12.4%	12.1%	10.8%
Public Enterprises	13.2%	14.2%	12.8%	13.0%	12.4%	12.7%	12.1%
Central Bank	11.1%	10.4%	6.5%	5.0%	4.7%	4.7%	4.4%
Banking System	13.1%	12.6%	11.5%	11.4%	10.2%	9.9%	9.4%
Private Sector	20.1%	22.9%	22.9%	24.6%	24.6%	26.0%	26.0%

BASE SCENARIO

BALANCE OF PAYMENTS $ (In US$ Millions)

	1989	Projection period 1990	1991	1992	1993	1994	1995
Resource Balance	968	202	188	471	901	1263	1629
Exports of which:	9637	9828	10912	12564	14469	16441	18614
Copper exports	4051	3151	2958	3227	3661	4056	4538
Non copper exports	5586	6677	7954	9336	10808	12384	14076
Imports	8669	9626	10724	12093	13567	15178	16984
Net Factor Payments	1959	1977	2049	2301	2584	3215	3335
Interest payments	1832	1850	1842	1817	1811	2003	2204
Interest receipts	273	268	264	253	253	308	349
Net profit remittances	400	396	471	737	1026	1520	1480
Foreign Transfers to:	222	221	267	339	465	474	503
Government	155	157	190	241	330	337	357
Private Sector	67	64	77	98	135	137	146
CA Balance	-769	-1555	-1595	-1491	-1218	-1478	-1208
Direct Foreign Investment	1475	1110	690	600	400	450	500
for debt conversion	1165	880	440	220	0	0	0
other	310	230	250	380	400	450	500
Net External Debt	-2016	325	845	861	818	1028	703
financing flow	459	1325	1345	1111	818	1028	703
debt conversion	-2475	-1000	-500	-250	0	0	0
Counterpart,debt conversion	1310	120	60	30	0	0	0
Memorandum Items							
Net Foreign Debt	14022	14347	15191	16052	16870	17898	18601
Foreign Reserves	2948	3035	3164	3423	3995	4361	5573
Gross Foreign Debt (ex.IMF)	16970	17382	18355	19475	20865	22260	24173
Government	3676	3676	3774	3940	4026	4109	4166
Public Enterprises	3063	3233	3472	3741	4023	4338	4685
Central Bank	2553	2368	1774	1449	1523	1596	1679
Banking System	3030	2880	3127	3257	3311	3377	3633
Private Sector	4645	5226	6208	7089	7982	8839	10011
Net Debt Conversion	2475	1000	500	250	0	0	0
Discrepancy	240	0	0	0	0	0	0
Exchange Rate	265	342	402	434	469	511	557
e.o.p. Exchange Rate	298	392	411	457	480	543	570
For.Price of Copper ($/lb)	1.20	0.89	0.77	0.74	0.82	0.89	0.98
Reserves in months of Imp.	4.1	3.8	3.6	3.4	3.5	3.4	3.9
Copper Stabilization Fund	1481	1571	1545	1376	1294	1255	1255

BASE SCENARIO

CAPITAL FLOWS BY SECTOR

	1990	1991	1992	1993	1994	1995
Disbursements	2824.8	2917.0	2892.0	3277.9	3247.9	3980.4
BS	116.0	401.9	207.9	411.3	445.7	680.6
CB	842.1	544.1	727.2	553.2	540.3	610.7
Government	284.1	489.9	545.7	525.5	559.6	573.6
PEs	354.9	426.0	490.5	662.9	728.3	834.7
PR	1227.6	1105.1	920.8	1125.1	973.9	1280.8
Ordinary Amortization	918.0	1444.0	1521.5	1888.0	1853.4	2066.5
BS	16.4	29.0	15.9	357.3	380.0	424.5
CB	80.6	887.8	926.8	479.3	467.3	526.2
Government	284.1	342.4	379.7	438.7	476.4	517.0
PEs	184.8	187.3	221.4	381.2	412.4	487.8
PR	397.1	-2.5	-22.3	231.5	117.4	109.0
Financing Gap	4.8	823.0	778.0	999.9	679.9	1169.4
BS	2.0	273.7	67.2	254.5	259.0	453.0
CB	51.3	443.3	625.7	445.2	422.2	487.2
Government	-209.9	-64.1	38.2	-14.5	-30.9	-43.9
PEs	-40.3	-6.6	38.3	175.4	183.9	235.7
PR	201.6	176.7	8.7	139.4	-154.4	37.4
Memorandum Items:						
Public Gap	-198.8	372.6	702.2	606.0	575.3	679.0
Private Gap	203.7	450.4	75.8	393.9	104.6	490.4
Change in Reserves	87.2	128.4	259.5	572.2	366.1	1211.2
Res. months imports	3.8	3.5	3.4	3.5	3.4	3.9
Exchange Rate	341.9	401.7	433.8	468.5	510.7	556.6
e.o.p. Exchange Rate	392.2	411.4	457.4	479.9	543.4	570.2

BASE SCENARIO

PRIVATE SECTOR % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
Current Income	89.5%	95.0%	93.5%	92.5%	92.2%	92.0%	91.6%
Factor Income	74.9%	78.6%	80.0%	80.7%	80.5%	80.3%	80.1%
Interest Receipts on:	3.7%	5.3%	4.0%	2.8%	2.7%	2.7%	2.7%
Domestic Debt	3.7%	5.3%	4.0%	2.8%	2.7%	2.7%	2.7%
Deposits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Transfer Receipts from:	8.2%	8.1%	8.1%	8.2%	8.3%	8.3%	8.2%
Government	10.7%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Residual Transfer	-4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Public Enterprises	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Foreign Sector	0.3%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%
BS Dividends	2.7%	2.9%	1.4%	0.8%	0.7%	0.7%	0.6%
Current Expenditures	77.7%	81.8%	80.3%	79.2%	78.4%	78.3%	76.8%
Direct Taxes	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Consumption	67.0%	70.1%	70.7%	70.5%	69.5%	68.5%	67.6%
Interest Payments on:	8.7%	9.7%	7.6%	6.7%	6.8%	7.8%	7.3%
BS Credits	5.8%	6.8%	3.9%	2.2%	1.8%	1.5%	1.3%
Dir.For.Investment	1.5%	1.5%	1.7%	2.4%	3.1%	4.2%	3.7%
Foreign Borrowing	1.4%	1.9%	2.0%	2.0%	2.0%	2.1%	2.2%
Private Savings	11.9%	13.1%	13.2%	13.3%	13.8%	13.7%	14.8%
Capital Account							
1. Financing	10.2%	3.8%	6.1%	4.6%	3.5%	4.0%	3.1%
Capital Transfers fr.Govt.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BS Credits	-0.5%	0.3%	0.0%	-0.3%	-0.4%	0.4%	-1.1%
Foreign Debt	1.6%	2.2%	3.5%	2.9%	2.7%	2.4%	3.0%
Capital gain on debt conv.	3.5%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Dir.For.Inv. of which:	5.7%	4.2%	2.5%	2.0%	1.2%	1.2%	1.3%
for debt conv.	4.5%	3.4%	1.6%	0.7%	0.0%	0.0%	0.0%
Other	1.2%	0.9%	0.9%	1.2%	1.2%	1.2%	1.3%
2. Asset Accumulation	22.0%	20.0%	19.3%	17.9%	17.3%	17.6%	17.9%
Investment	15.2%	15.0%	14.7%	14.2%	13.9%	14.2%	14.5%
Public Debt	6.0%	3.8%	3.8%	2.9%	2.5%	2.6%	2.6%
Money	0.8%	1.2%	0.9%	0.8%	0.8%	0.8%	0.8%
Stocks							
Credit from BS	25.0%	19.5%	15.7%	12.9%	10.6%	9.3%	6.7%
Public Debt	21.1%	20.1%	20.0%	19.7%	19.2%	18.8%	18.4%
Foreign Debt	20.1%	22.9%	22.9%	24.6%	24.6%	26.0%	26.0%
Money	6.1%	5.9%	5.6%	5.6%	5.5%	5.5%	5.5%

PARAMETER VALUES - BASE SCENARIO

	1990	1991	1992	1993	1994	1995
cbfee	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
gh	19.5%	18.5%	18.0%	18.0%	18.0%	18.0%
gx	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
h	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
h0	0.47	0.47	0.47	0.47	0.47	0.47
h1	0.53	0.53	0.53	0.53	0.53	0.53
h2	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21
ICOR	5.0	4.0	3.7	4.2	4.2	4.2
kgain	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
kpr	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ko	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%
s	0.8	0.8	0.8	0.8	0.8	0.8
x0	0.65	0.81	0.81	0.81	0.81	0.81
x1	0.38	0.38	0.38	0.38	0.38	0.38
zbe	65.0%	50.0%	50.0%	50.0%	50.0%	50.0%
zcb	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
zo	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%
zopr	34.3%	34.3%	34.3%	34.3%	34.3%	34.3%
zpr	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
alfa	0.67	0.8	0.8	0.8	0.8	0.8
alfaG	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%
betaG	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
deltaG	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
fiPR	24.0%	24.5%	26.5%	26.5%	28.0%	28.0%
fiBS	5.2	5.2	5.2	4.7	4.6	4.4
fiCB	12.0%	9.0%	7.5%	7.0%	7.0%	6.5%
fiG	0.0%	70.0%	70.0%	70.0%	70.0%	70.0%
fiO	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
gamma	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
gammaCOP	0.2	0.2	0.2	0.2	0.2	0.2
gammaG	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%
gammaNCOP	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
lambdaPR	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%
lambda0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
mu0	0.11	0.21	0.21	0.21	0.21	0.21
mu1	1.2	1.2	1.2	1.2	1.2	1.2
mu2	-0.26	-0.26	-0.26	-0.26	-0.26	-0.26
rho	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
sigmaG	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%
sigma0	2.4%	2.2%	2.0%	2.0%	2.0%	2.0%
tauDPR	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
tauDO	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
tauI	13.9%	13.9%	13.9%	13.9%	13.9%	13.9%
tauS	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
theta	0.77	0.77	0.77	0.77	0.77	0.77

NOTE: See Appendix A for parameter definitions

APPENDIX D

Simulation results: fiscal expansion

FISCAL SCENARIO NATIONAL ACCOUNTS, Rates of Growth

		Projection period					
	1989	1990	1991	1992	1993	1994	1995
Gross Domestic Product	27.3%	31.6%	27.7%	20.3%	19.3%	19.0%	18.9%
Total Consumption	27.8%	38.0%	29.4%	21.3%	18.9%	18.0%	17.9%
Govt. Consumption	10.7%	38.3%	32.7%	26.3%	22.7%	19.0%	18.9%
PR Consumption	30.6%	37.9%	28.9%	20.6%	18.3%	17.8%	17.7%
Total Investment	50.7%	29.0%	24.4%	15.9%	19.0%	22.2%	22.3%
Govt. Investment	8.9%	51.0%	49.5%	27.1%	19.3%	19.2%	19.2%
PR Investment	76.1%	26.2%	20.7%	14.1%	18.8%	23.4%	23.6%
PEs Investment	-1.1%	23.8%	17.5%	9.3%	19.3%	19.2%	19.2%
Imports	40.0%	44.2%	32.5%	23.1%	22.1%	22.3%	22.2%
Exports of which:	26.0%	31.2%	29.6%	23.3%	23.3%	22.9%	22.6%
Copper	28.1%	0.3%	10.3%	17.8%	22.5%	20.8%	21.9%
Non copper	24.5%	53.7%	38.7%	25.3%	23.5%	23.6%	22.9%
NA in real terms							
Gross Domestic Product	10.0%	4.7%	5.8%	6.0%	5.0%	4.8%	4.8%
Total Consumption	8.1%	4.1%	4.9%	5.7%	5.0%	4.0%	4.2%
Govt. Consumption	0.9%	8.0%	10.2%	11.3%	8.0%	4.6%	4.8%
PR Consumption	9.1%	3.5%	4.2%	4.9%	4.6%	3.9%	4.1%
Total Investment	32.6%	0.6%	2.8%	2.1%	4.8%	7.3%	7.6%
Govt. Investment	-4.1%	17.7%	23.4%	12.0%	5.0%	4.6%	4.8%
PR Investment	55.0%	-1.6%	-0.4%	0.6%	4.7%	8.4%	8.7%
PEs Investment	-12.9%	-3.5%	-3.0%	-3.7%	5.0%	4.6%	4.8%
Imports	26.3%	6.1%	7.4%	8.6%	7.7%	6.9%	6.8%
Exports of which:	14.8%	10.9%	11.4%	11.2%	7.4%	6.4%	6.0%
Copper	13.4%	4.2%	8.8%	13.2%	3.0%	1.5%	1.9%
Non copper	15.4%	13.4%	12.4%	10.5%	8.9%	8.0%	7.3%
Adjusted Disp. income	16.0%	0.9%	5.7%	6.6%	3.8%	2.5%	4.6%
Price Indices							
GDP deflator	15.8%	25.7%	20.4%	13.5%	13.6%	13.7%	13.5%
Consumption deflator	19.7%	33.2%	23.8%	14.9%	13.1%	13.4%	13.0%
Investment deflator	13.6%	28.2%	21.1%	13.5%	13.6%	13.9%	13.7%
Export deflator	9.7%	18.4%	16.3%	10.8%	14.8%	15.5%	15.6%
" " for copper	13.0%	-3.8%	1.4%	4.1%	18.9%	19.0%	19.6%
" " for others	7.9%	35.5%	23.4%	13.4%	13.4%	14.5%	14.5%
Import deflator	10.9%	36.0%	23.4%	13.4%	13.4%	14.5%	14.5%
Terms of Trade	-1.0%	-12.9%	-5.8%	-2.3%	1.2%	0.9%	1.0%
Real Exchange Rate	-3.5%	7.6%	2.5%	-0.1%	-0.2%	0.6%	0.8%

FISCAL SCENARIO CURRENT (Billions of Pesos) & REAL NATIONAL ACCOUNTS

	1989	1990	1991	1992	1993	1994	1995
		Projection period					
Gross Domestic Product	6889.8	9067.6	11547.3	13889.0	16571.5	19720.6	23449.6
Total Consumption	5248.5	7242.6	9370.3	11363.1	13507.1	15938.2	18787.4
Govt. Consumption	629.3	870.5	1154.7	1458.3	1789.7	2129.8	2532.6
PR Consumption	4619.2	6372.1	8215.6	9904.8	11717.4	13808.4	16254.9
Total Investment	1384.8	1785.7	2222.2	2674.5	3062.6	3742.0	4577.9
Govt. Investment	169.6	256.0	382.8	486.6	580.3	691.7	824.3
PR Investment	1049.7	1324.8	1698.8	1824.8	2168.6	2676.8	3308.1
PEs Investment	165.5	204.8	240.6	263.0	313.7	373.9	445.5
Imports	2297.3	3312.3	4387.9	5401.8	6597.2	8068.1	9858.7
Exports of which:	2553.8	3351.6	4342.8	5353.3	6599.0	8108.6	9942.9
Copper	1073.5	1077.0	1188.2	1400.1	1715.5	2071.5	2528.0
Non copper	1480.3	2274.6	3154.6	3953.2	4883.5	6037.1	7416.9
NA in real terms (In Pesos' 1977)							
Gross Domestic Product	470.4	492.6	521.3	552.4	580.2	607.1	636.1
Total Consumption	360.8	376.4	394.0	416.6	437.6	455.3	474.6
Govt. Consumption	43.8	47.3	52.1	58.0	62.7	65.6	68.7
PR Consumption	317.0	328.1	341.9	358.6	375.0	389.8	405.9
Total Investment	102.5	103.1	105.9	108.1	113.3	121.5	130.7
Govt. Investment	12.6	14.8	18.2	20.4	21.5	22.5	23.5
PR Investment	77.7	76.5	76.2	76.6	80.2	86.9	94.5
PEs Investment	12.2	11.8	11.5	11.0	11.6	12.1	12.7
Imports	180.1	138.0	148.1	160.8	173.2	185.1	197.6
Exports of which:	137.2	152.1	169.5	188.5	202.4	215.3	228.4
Copper	88.5	40.1	43.6	49.4	50.9	51.7	52.7
Non copper	98.7	112.0	125.9	139.1	151.5	163.7	175.7
Price Indices							
GDP deflator	14.6	18.4	22.2	25.1	28.6	32.5	36.9
Consumption deflator	14.6	19.4	24.0	27.6	31.2	35.4	40.0
Investment deflator	13.5	17.3	21.0	23.8	27.0	30.8	35.0
Export deflator	18.6	22.0	25.6	28.4	32.6	37.7	43.5
" " for copper	27.9	26.8	27.2	28.3	33.7	40.1	48.0
" " for others	15.0	20.3	25.1	28.4	32.2	36.9	42.2
Import deflator	17.7	24.0	29.6	33.6	38.1	43.6	49.9
Terms of Trade	105.4	91.8	86.5	84.5	85.6	86.4	87.3
Real Exch. Rate (Pim/P)	26.0	28.0	28.7	28.7	28.7	28.9	29.1

FISCAL SCENARIO	GOVERNMENT	% OF GDP					
		Projection period					
	1989	1990	1991	1992	1993	1994	1995
Current Revenue	25.8%	24.1%	23.7%	23.9%	24.4%	24.5%	24.6%
Factor Income	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Direct Taxes	7.8%	6.4%	5.9%	5.8%	6.2%	6.3%	6.4%
Direct Taxes fr. PR	1.9%	2.3%	2.5%	2.8%	3.2%	3.2%	3.2%
Direct Taxes fr. PEs	5.9%	4.1%	3.4%	3.0%	3.1%	3.1%	3.2%
Indirect Taxes	13.9%	14.2%	14.5%	15.0%	15.0%	15.0%	15.0%
Dividends fr. PEs	1.7%	1.2%	1.0%	0.8%	0.9%	0.9%	0.9%
Current Expenditures	20.5%	20.9%	21.8%	23.0%	23.2%	23.4%	23 7%
Interest Payments to:	2.1%	1.1%	1.1%	1.2%	1.3%	1.5%	1.7%
Central Bank	-0.7%	-1.3%	-0.9%	-0.5%	-0.4%	-0.3%	-0.3%
Domestic Debt	1.9%	1.7%	1.1%	0.6%	0.5%	0.5%	0.4%
Banking System	-0.5%	-0.8%	-0.5%	-0.2%	-0.1%	0.0%	0.1%
Foreign Sector	1.4%	1.5%	1.4%	1.2%	1.2%	1.3%	1.4%
Net Current Govt.Tr.to:	6.1%	7.0%	7.5%	8.1%	7.9%	8.0%	8.0%
Private Sector	10.7%	7.0%	7.6%	8.3%	8.3%	8.3%	8.3%
Residual Transfer to PR	-4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Central Bank	0.0%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%
Foreign Sector	-0.6%	-0.6%	-0.7%	-0.8%	-0.9%	-0.9%	-0.8%
Government Subsidies	3.1%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
Government Consumption	9.1%	9.6%	10.0%	10.5%	10.8%	10.8%	10.8%
Government Savings	5.3%	3.2%	1.9%	0.9%	1.2%	1.0%	1.0%
Capital Expenditure	2.9%	3.2%	3.6%	3.8%	3.8%	3.8%	3.8%
Net Capital Transfers to:	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%
Public Enterprises	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%
Private Sector	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Government Investment	2.5%	2.8%	3.3%	3.5%	3.5%	3.5%	3.5%
Government Deficit	-2.4%	0.0%	1.7%	2.9%	2.6%	2.8%	2.9%
Credit from CB	-1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Credit from BS	-1.0%	0.0%	0.4%	0.7%	0.7%	0.7%	0.7%
Net Foreign Debt	0.6%	0.0%	1.2%	2.0%	1.8%	1.9%	2.0%
Net Domestic Debt	-0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Stocks							
Foreign Debt	15.9%	15.9%	14.3%	15.4%	15.4%	16.7%	16.8%
Total Domestic Debt	-1.6%	-1.2%	-0.5%	0.5%	1.2%	1.8%	2.4%
of which CB Credits	-5.1%	-3.9%	-3.0%	-2.5%	-2.1%	-1.8%	-1.5%
BS Credits	-3.1%	-2.4%	-1.4%	-0.5%	0.2%	0.9%	1.5%
Government Debt	6.6%	5.0%	4.0%	3.5%	3.1%	2.7%	2.4%
Special Debt to CB	28.5%	30.5%	30.5%	29.6%	28.7%	28.3%	28.0%

FISCAL SCENARIO

PUBLIC ENTERPRISES % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
Current Revenue	11.9%	8.2%	8.7%	8.0%	8.1%	8.2%	8.5%
Factor Income of which:	11.9%	8.2%	8.7%	8.0%	8.1%	8.2%	8.5%
Copper	8.3%	5.1%	5.6%	2.9%	3.0%	3.2%	3.4%
Non copper	3.6%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Current Expenditures	9.9%	7.7%	6.8%	6.2%	6.3%	6.5%	6.7%
Direct Taxes	5.9%	4.1%	3.4%	3.0%	3.1%	3.1%	3.2%
Interest Payments to:	1.1%	1.3%	1.4%	1.3%	1.3%	1.4%	1.5%
Private Sector	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Banking System	0.1%	0.0%	0.2%	0.2%	0.3%	0.4%	0.5%
Foreign Sector	1.0%	1.3%	1.2%	1.1%	1.0%	1.0%	1.0%
Current Transfers to PR	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Dividents	1.7%	1.2%	1.0%	0.8%	0.9%	0.9%	0.9%
Savings	1.9%	0.6%	0.0%	-0.2%	-0.2%	-0.2%	-0.3%
Net Capital Expenditure	2.0%	1.9%	1.6%	1.6%	1.6%	1.6%	1.6%
Investment	2.4%	2.3%	2.1%	1.9%	1.9%	1.9%	1.9%
Net Capital Transfers Govt.	-0.4%	-0.4%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%
Deficit	0.1%	1.3%	1.8%	1.8%	1.8%	1.8%	1.9%
Borrowing from PR	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Credit from BS	-0.1%	0.7%	0.9%	0.9%	0.9%	0.9%	0.9%
Net Foreign Debt	0.0%	0.7%	0.9%	0.9%	0.9%	0.9%	0.9%
Capital gain on debt conv	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stocks							
Domestic Debt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Credit from BS	0.2%	0.8%	1.5%	2.2%	2.7%	3.2%	3.6%
Foreign Debt	12.2%	14.0%	12.4%	12.5%	11.9%	12.3%	11.8%
Memorandum Items							
CODELCO revenue	14.0%	10.4%	8.7%	7.6%	7.6%	7.5%	7.6%
CODELCO costs	5.7%	5.3%	5.0%	4.7%	4.5%	4.3%	4.2%

FISCAL SCENARIO

PUBLIC SECTOR % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
Non Financial Public Sector							
Current Revenue	30.1%	27.0%	26.1%	26.0%	26.6%	26.7%	26.9%
Current Expenditure	22.9%	23.2%	24.2%	25.3%	25.6%	25.9%	26.2%
Savings	7.2%	3.8%	1.9%	0.7%	1.0%	0.8%	0.7%
Capital Expenditure	4.9%	5.1%	5.4%	5.4%	5.4%	5.4%	5.4%
Deficit financed by:	-2.4%	1.3%	3.5%	4.7%	4.4%	4.6%	4.7%
Domestic Debt	-0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Central Bank	-1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Banking Sector	-1.1%	0.7%	1.3%	1.6%	1.5%	1.6%	1.6%
Foreign Debt	0.6%	0.7%	2.1%	2.9%	2.7%	2.9%	2.9%
Capital gain	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Consolidated Public Sector							
(Including Central Bank)							
Current Revenue	31.1%	27.8%	26.6%	26.3%	26.7%	27.0%	27.4%
Current Expenditure	27.0%	28.9%	28.8%	28.4%	28.3%	28.6%	28.8%
Savings	4.1%	-1.0%	-2.1%	-2.1%	-1.6%	-1.6%	-1.4%
Capital Expenditure	4.9%	5.1%	5.4%	5.4%	5.4%	5.4%	5.4%
Deficit	0.8%	6.1%	7.5%	7.5%	7.0%	7.0%	6.8%
Change in Base Money	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%
Net Domestic Debt	5.5%	5.9%	7.9%	6.1%	4.5%	2.9%	4.0%
Net Foreign Debt	-6.2%	-0.5%	-1.0%	0.9%	2.0%	3.6%	2.3%
Capital gain on debt conv	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Stocks							
Net Public Debt	46.5%	47.2%	45.0%	46.3%	46.2%	47.8%	47.6%
Domestic	19.1%	20.4%	23.9%	26.0%	26.3%	25.0%	25.1%
Foreign	27.5%	26.8%	21.1%	20.4%	20.0%	22.8%	22.5%

FISCAL SCENARIO

CENTRAL BANK % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
CURRENT ACCOUNT							
Current Revenue	0.2%	0.0%	0.3%	0.3%	0.3%	0.4%	0.7%
Interest on Int'l Reserves	1.0%	1.0%	0.9%	0.9%	0.8%	0.8%	0.8%
Interest on Domestic Loans	-0.8%	-1.6%	-1.2%	-1.1%	-1.1%	-0.9%	-0.5%
to Government	-0.7%	-1.3%	-0.9%	-0.5%	-0.4%	-0.3%	-0.3%
to Banking System	-0.1%	-0.2%	-0.4%	-0.6%	-0.7%	-0.6%	-0.3%
Transfer fr. Government	0.0%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%
Current Expenditures	3.4%	4.8%	4.2%	3.1%	2.9%	2.8%	2.8%
Interest on Foreign Debt	1.6%	1.1%	0.9%	0.6%	0.4%	0.4%	0.4%
Interest on Dom. Debt	1.8%	3.8%	3.4%	2.5%	2.5%	2.4%	2.4%
Savings of CB	-3.2%	-4.8%	-4.0%	-2.8%	-2.6%	-2.4%	-2.1%
CAPITAL ACCOUNT							
1. Change in Assets	-0.9%	-0.5%	-1.3%	-0.2%	0.8%	0.9%	1.2%
Foreign Reserves	1.5%	0.6%	1.2%	1.1%	1.0%	-0.5%	0.6%
Domestic Credit of CB	-2.5%	-1.1%	-2.5%	-1.3%	-0.2%	1.4%	0.4%
to Government	-1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
to Banking System	-0.6%	-1.1%	-2.5%	-1.3%	-0.2%	1.4%	0.4%
2. Change in Liabilities	-0.9%	-0.5%	-1.3%	-0.2%	0.8%	0.9%	1.2%
Base Money	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%
Currency	0.6%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%
Bank Reserves	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Foreign Debt of CB	-5.3%	-0.6%	-1.9%	-1.0%	0.3%	0.2%	0.2%
Capital gain on debt conv.	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Domestic Debt of CB	6.0%	4.1%	4.0%	3.0%	2.6%	2.6%	2.6%
Savings of CB	-3.2%	-4.8%	-4.0%	-2.8%	-2.6%	-2.4%	-2.1%
STOCKS							
Net Foreign Reserves	12.8%	13.5%	12.3%	12.6%	12.1%	10.9%	10.5%
Domestic Credit to:	-6.0%	-5.6%	-6.9%	-7.0%	-6.1%	-3.7%	-2.8%
Government	-5.1%	-3.9%	-3.0%	-2.5%	-2.1%	-1.8%	-1.5%
Banking System	-0.9%	-1.8%	-3.9%	-4.5%	-4.0%	-1.9%	-1.3%
Special Loan to Govt.	28.6%	30.5%	30.5%	29.6%	28.7%	28.3%	28.0%
Base Money	3.5%	3.2%	3.1%	3.0%	3.0%	3.0%	3.0%
Currency	3.2%	2.9%	2.8%	2.8%	2.8%	2.7%	2.7%
Bank Reserves	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Domestic Debt	14.5%	15.2%	15.9%	16.3%	16.3%	16.3%	16.3%
Foreign Debt	11.1%	10.4%	6.6%	5.1%	4.7%	4.7%	4.4%
Copper Stabilization Fund	21.5%	17.3%	13.4%	9.9%	7.8%	6.4%	5.4%

FISCAL SCENARIO

BANKING SYSTEM % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
CURRENT ACCOUNT							
Current Revenues	5.4%	5.8%	3.9%	2.3%	2.0%	1.8%	1.9%
Interest on Credit to:	5.4%	5.8%	3.9%	2.3%	2.0%	1.8%	1.9%
Government	-0.5%	-0.8%	-0.5%	-0.2%	-0.1%	0.0%	0.1%
Public Enterprises	0.1%	0.0%	0.2%	0.2%	0.3%	0.4%	0.5%
Private Sector	5.8%	6.5%	4.3%	2.3%	1.7%	1.3%	1.3%
Current Expenditures	4.2%	4.1%	2.3%	1.4%	1.1%	1.0%	1.2%
Interest on Deposits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
" " CB Credits	-0.1%	-0.2%	-0.4%	-0.6%	-0.7%	-0.6%	-0.3%
" " Foreign Debt	1.6%	1.2%	1.1%	1.0%	0.9%	0.9%	0.8%
Dividends of BS	2.7%	3.1%	1.6%	1.0%	0.9%	0.8%	0.7%
Savings of BS	1.2%	1.7%	1.6%	1.0%	0.9%	0.8%	0.7%
CAPITAL ACCOUNT							
1. Change in Assets	-1.5%	1.0%	0.7%	0.7%	1.3%	2.8%	2.1%
Change in Credits to:	-1.6%	1.0%	0.7%	0.7%	1.3%	2.8%	2.1%
Government	-1.0%	0.0%	0.4%	0.7%	0.7%	0.7%	0.7%
Public Enterprises	-0.1%	0.7%	0.9%	0.9%	0.9%	0.9%	0.9%
Private Sector	-0.5%	0.3%	-0.6%	-1.0%	-0.3%	1.2%	0.4%
Bank Reserves	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
2. Change in Liabilities	-1.5%	1.0%	0.7%	0.7%	1.3%	2.8%	2.1%
Credit from CB	-0.6%	-1.1%	-2.5%	-1.3%	-0.2%	1.4%	0.4%
International Debt	-3.1%	-0.4%	1.1%	0.6%	0.2%	0.2%	0.7%
Capital gain on debt conv	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Deposits	0.2%	0.7%	0.5%	0.5%	0.4%	0.4%	0.4%
Savings of BS	1.2%	1.7%	1.6%	1.0%	0.9%	0.8%	0.7%
STOCKS							
Credit to Govt.	-3.1%	-2.4%	-1.4%	-0.5%	0.2%	0.9%	1.5%
" " PEs	0.2%	0.8%	1.5%	2.2%	2.7%	3.2%	3.6%
" " PR	25.0%	19.3%	14.5%	11.1%	9.1%	8.8%	7.8%
Bank Reserves	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Credits from CB	-0.9%	-1.8%	-3.9%	-4.6%	-4.0%	-1.9%	-1.3%
Foreign Debt	13.1%	12.7%	11.6%	11.3%	10.2%	9.9%	9.4%
Deposits	2.9%	2.9%	2.8%	2.8%	2.8%	2.7%	2.7%

FISCAL SCENARIO

BALANCE OF PAYMENTS % OF GDP

	1989	Projection period 1990	1991	1992	1993	1994	1995
Resource Balance	3.7%	0.4%	-0.4%	-0.3%	0.0%	0.2%	0.4%
Exports of which:	37.1%	37.0%	37.6%	38.5%	39.8%	41.1%	42.4%
Copper exports	15.6%	11.9%	10.3%	10.1%	10.4%	10.5%	10.8%
Non copper exports	21.5%	25.1%	27.3%	28.5%	29.5%	30.6%	31.6%
Imports	33.3%	36.5%	38.0%	38.9%	39.8%	40.9%	42.0%
Net Factor Payments	7.5%	7.5%	7.2%	7.3%	7.6%	8.8%	8.7%
Interest payments	7.0%	7.0%	6.5%	6.9%	5.5%	5.7%	5.9%
Interest receipts	1.0%	1.0%	0.9%	0.9%	0.8%	0.8%	0.8%
Other factor payments	1.5%	1.5%	1.6%	2.3%	2.9%	3.9%	3.5%
Foreign Transfers to:	0.9%	0.8%	0.9%	1.1%	1.3%	1.2%	1.2%
Government	0.6%	0.6%	0.7%	0.8%	0.9%	0.9%	0.8%
Private Sector	0.3%	0.2%	0.3%	0.3%	0.4%	0.4%	0.3%
CA Balance	-3.0%	-6.2%	-6.6%	-6.6%	-6.3%	-7.4%	-7.1%
Direct Foreign Investment	5.7%	4.2%	2.4%	1.9%	1.1%	1.2%	1.2%
for debt conversion	4.5%	3.3%	1.5%	0.7%	0.0%	0.0%	0.0%
other	1.2%	0.9%	0.9%	1.2%	1.1%	1.2%	1.2%
Net External Debt	-7.8%	1.6%	4.0%	4.7%	5.1%	6.2%	6.0%
Financing flow	1.8%	5.3%	5.8%	5.4%	5.1%	6.2%	6.0%
Debt conversion	-9.5%	-3.8%	-1.7%	-0.8%	0.0%	0.0%	0.0%
Counterpart,debt conversion	5.0%	0.5%	0.2%	0.1%	0.0%	0.0%	0.0%
Memorandum Items							
Net Foreign Debt	60.6%	62.4%	56.5%	56.2%	54.7%	58.7%	57.9%
Foreign Reserves	12.8%	13.5%	12.3%	12.6%	12.1%	10.9%	10.5%
Gross Foreign Debt (ex.IMF)	73.4%	75.9%	67.9%	68.8%	66.8%	69.6%	68.4%
Government	15.9%	15.9%	14.3%	15.4%	15.4%	16.7%	16.8%
Public Enterprises	13.2%	14.0%	12.4%	12.5%	11.9%	12.3%	11.8%
Central Bank	11.1%	10.4%	6.6%	5.1%	4.7%	4.7%	4.4%
Banking System	13.1%	12.7%	11.6%	11.3%	10.2%	9.9%	9.4%
Private Sector	20.1%	22.9%	22.9%	24.6%	24.6%	26.0%	26.0%

FISCAL SCENARIO

BALANCE OF PAYMENTS $ (In US$ Millions)

	1989	1990	1991	1992	1993	1994	1995
		Projection period					
Resource Balance	968	115	-112	-112	4	79	151
Exports of which:	9637	9804	10812	12340	14085	15878	17862
Copper exports	4051	3151	2958	3227	3661	4056	4538
Non copper exports	5586	6654	7854	9113	10424	11822	13324
Imports	8669	9689	10924	12452	14081	15799	17711
Net Factor Payments	1959	1977	2060	2348	2687	3413	3665
Interest payments	1832	1850	1860	1886	1943	2214	2502
Interest receipts	273	268	271	277	282	321	317
Net profit remittances	400	396	471	737	1026	1520	1480
Foreign Transfers to:	222	221	267	339	465	474	503
Government	155	157	190	241	330	337	357
Private Sector	67	64	77	98	135	137	143
CA Balance	-769	-1642	-1906	-2119	-2218	-2860	-3010
Direct Foreign Investment	1475	1110	690	600	400	450	500
for debt conversion	1165	880	440	220	0	0	0
other	310	230	250	380	400	450	500
Net External Debt	-2016	412	1156	1489	1818	2410	2510
financing flow	459	1412	1656	1739	1818	2410	2510
debt conversion	-2475	-1000	-500	-250	0	0	0
Counterpart,debt conversion	1310	120	60	30	0	0	0
Memorandum Items							
Net Foreign Debt	14022	14434	15589	17078	18896	21306	23816
Foreign Reserves	2948	3114	3463	3817	4165	3962	4313
Gross Foreign Debt (ex.IMF)	16970	17548	19052	20895	23061	25268	28130
Government	3676	3676	4027	4669	5313	6061	6907
Public Enterprises	3063	3238	3492	3767	4103	4458	4850
Central Bank	2556	2405	1852	1544	1639	1723	1813
Banking System	3030	2932	3248	3423	3509	3591	3866
Private Sector	4645	5297	6438	7472	8497	9435	10693
Net Debt Conversion	2475	1000	500	250	0	0	0
Discrepancy	240	0	0	0	0	0	0
Exchange Rate	265	342	402	434	469	511	557
e.o.p. Exchange Rate	298	392	411	457	480	543	570
For.Price of Copper ($/lb)	1.20	0.89	0.77	0.74	0.82	0.89	0.98
Reserves in months of Imp.	4.1	3.9	3.8	3.7	3.5	3.0	2.9
Copper Stabilization Fund	1481	1571	1545	1376	1294	1255	1255

FISCAL SCENARIO

CAPITAL FLOWS BY SECTOR

	1990	1991	1992	1993	1994	1995
Disbursements	2490.6	3448.8	3632.2	4132.0	4219.8	5183.0
BS	168.4	464.5	264.5	456.3	480.8	724.1
CB	879.5	584.7	748.7	582.8	581.7	632.9
Government	284.1	693.7	1021.1	1110.7	1306.3	1508.4
PEs	859.7	441.9	516.4	699.7	772.6	889.2
PR	1299.0	1264.0	1081.5	1282.4	1096.4	1428.3
Ordinary Amortization	918.0	1444.0	1540.0	1965.5	2013.2	2321.2
BS	16.4	29.0	21.7	370.1	399.1	448.6
CB	80.6	887.8	931.0	487.9	478.3	542.6
Government	284.1	342.4	379.7	466.9	557.4	663.0
PEs	184.9	187.3	222.0	383.5	417.5	497.1
PR	897.1	-2.5	-14.3	257.0	160.8	169.9
Financing Gap	170.6	1354.8	1518.2	1854.0	1851.8	2372.0
BS	54.4	336.3	128.8	299.5	294.3	496.5
CB	88.7	483.9	647.2	474.8	443.6	509.4
Government	-209.9	189.7	513.6	570.7	715.8	890.9
PEs	-35.5	9.3	64.2	212.2	228.2	290.2
PR	273.0	335.6	169.4	296.7	-29.9	184.9
Memorandum Items:						
Public Gap	-156.7	682.8	1225.0	1257.7	1387.6	1690.5
Private Gap	327.4	671.9	293.1	596.3	264.2	681.5
Change in Reserves	166.1	349.2	353.2	248.5	-203.4	351.5
Res. months imports	3.9	3.8	3.7	3.5	3.0	2.9
	341.9	401.7	433.8	468.5	510.7	556.6
	392.2	411.4	457.4	479.9	543.4	570.2

FISCAL SCENARIO

PRIVATE SECTOR % OF GDP

		Projection period					
	1989	1990	1991	1992	1993	1994	1995
Current Income	89.6%	95.4%	94.7%	93.8%	93.4%	93.0%	92.6%
Factor Income	74.9%	78.4%	79.7%	80.0%	79.8%	79.7%	79.5%
Interest Receipts on:	8.7%	5.5%	4.5%	3.2%	3.0%	2.9%	2.8%
Domestic Debt	8.7%	5.5%	4.5%	3.2%	3.0%	2.9%	2.8%
Deposits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Transfer Receipts from:	8.2%	8.3%	8.9%	9.7%	9.7%	9.7%	9.7%
Government	10.7%	7.0%	7.6%	8.3%	8.3%	8.3%	8.3%
Residual Transfer	-4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Public Enterprises	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Foreign Sector	0.8%	0.2%	0.3%	0.3%	0.4%	0.4%	0.3%
BS Dividends	2.7%	3.1%	1.6%	1.0%	0.9%	0.8%	0.7%
Current Expenditures	77.7%	82.5%	81.6%	80.7%	80.5%	80.6%	79.5%
Direct Taxes	1.9%	2.3%	2.5%	2.8%	3.2%	3.2%	3.2%
Consumption	67.0%	70.3%	71.1%	71.3%	70.7%	70.0%	69.3%
Interest Payments on:	8.7%	9.9%	7.9%	6.6%	6.6%	7.4%	7.0%
BS Credits	5.6%	6.5%	4.3%	2.3%	1.7%	1.3%	1.3%
Dir.For.Investment	1.5%	1.5%	1.6%	2.3%	2.9%	3.9%	3.5%
Foreign Borrowing	1.4%	1.9%	2.0%	2.0%	2.0%	2.1%	2.2%
Private Savings	11.9%	12.9%	13.1%	13.1%	13.0%	12.4%	13.1%
Capital Account							
1. Financing	10.2%	7.1%	5.8%	4.2%	3.8%	4.8%	4.6%
Capital Transfers fr.Govt.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BS Credits	-0.5%	0.3%	-0.6%	-1.0%	-0.3%	1.2%	0.4%
Foreign Debt	1.6%	2.5%	4.0%	3.2%	2.9%	2.4%	3.0%
Capital gain on debt conv.	3.5%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Dir.For.Inv. of which:	5.7%	4.2%	2.4%	1.9%	1.1%	1.2%	1.2%
for debt conv.	4.5%	3.3%	1.5%	0.7%	0.0%	0.0%	0.0%
Other	1.2%	0.9%	0.9%	1.2%	1.1%	1.2%	1.2%
2. Asset Accumulation	22.0%	20.0%	18.9%	17.2%	16.7%	17.2%	17.7%
Investment	15.2%	14.6%	13.8%	13.1%	13.1%	13.6%	14.1%
Public Debt	6.0%	4.1%	4.1%	3.2%	2.8%	2.7%	2.7%
Money	0.8%	1.2%	0.9%	0.9%	0.9%	0.9%	0.8%
Stocks							
Credit from BS	26.0%	19.3%	14.5%	11.1%	9.1%	8.8%	7.8%
Public Debt	21.1%	20.2%	20.0%	19.8%	19.3%	19.0%	18.7%
Foreign Debt	20.1%	22.9%	22.9%	24.6%	24.6%	26.0%	26.0%
Money	6.1%	5.9%	5.6%	5.5%	5.5%	5.5%	5.4%

PARAMETER VALUES - FISCAL SCENARIO

	1990	1991	1992	1993	1994	1995
cbfee	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
gh	21.5%	20.5%	19.5%	19.0%	18.4%	18.1%
gx	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
h	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
h0	0.47	0.47	0.47	0.47	0.47	0.47
h1	0.53	0.53	0.53	0.53	0.53	0.53
h2	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21
ICOR	4.6	3.6	3.4	3.9	4.2	4.2
kgain	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
kpr	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ko	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%
s	0.8	0.8	0.8	0.8	0.8	0.8
x0	0.65	0.81	0.81	0.81	0.81	0.81
x1	0.38	0.38	0.38	0.38	0.38	0.38
zbs	65.0%	50.0%	50.0%	50.0%	50.0%	50.0%
zcb	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
zo	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%
zopr	34.3%	34.3%	34.3%	34.3%	34.3%	34.3%
zpr	7.0%	7.6%	8.3%	8.3%	8.3%	8.3%
alfa	0.67	0.3	0.3	0.3	0.3	0.3
alfaG	9.6%	10.0%	10.5%	10.8%	10.8%	10.8%
betaG	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
deltaG	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
fiPR	24.0%	24.5%	26.5%	26.5%	28.0%	28.0%
fiBS	5.2	5.2	5.2	4.7	4.6	4.4
fiCB	12.5%	9.0%	7.5%	7.0%	7.0%	6.5%
fiG	0.0%	70.0%	70.0%	70.0%	70.0%	70.0%
fiO	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
gamma	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
gammaCOP	0.2	0.2	0.2	0.2	0.2	0.2
gammaG	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%
gammaNCOP	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
lambdaPR	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%
lambda0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
mu0	0.11	0.21	0.21	0.21	0.21	0.21
mu1	1.2	1.2	1.2	1.2	1.2	1.2
mu2	-0.26	-0.26	-0.26	-0.26	-0.26	-0.26
rho	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
sigmaG	9.6%	10.0%	10.5%	10.8%	10.8%	10.8%
sigma0	2.4%	2.2%	2.0%	2.0%	2.0%	2.0%
tauDPR	2.9%	3.2%	3.5%	4.0%	4.0%	4.0%
tauD0	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
tauI	14.2%	14.5%	15.0%	15.0%	15.0%	15.0%
tauS	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
theta	0.77	0.77	0.77	0.77	0.77	0.77

NOTE: See Appendix A for parameter definitions

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